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SOME POINTS IN THE OPERATION OF GASTRECTOMY

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There is little doubt that the operation of partial gastrectomy is destined in the immediate future to occupy a much more important place in abdominal surgery than it has done, in this country at any rate, during the past decade. Cases of cancer of the stomach are being recognized at a much earlier stage; during the last two years 80 per cent. of those which I have seen have been operable. But apart from its application to cancer it seems clear that gastrectomy is rapidly becoming recognized as the only rational surgical treatment for those cases of peptic ulcer—admittedly quite a small proportion—which are not amenable to medical treatment, because it is the only means whereby the acid level can be reduced permanently below the danger point. The different short-circuiting operations, of which gastro-jejunostomy is the best, and the various limited resections in the pyloric region, are now in the dock, and the whole of Continental surgical opinion, and that of the younger group of surgeons in England and America, is trooping into the witness-box against them. They have played a part in surgical history; they have done good for a time because Nature can resist maltreatment of her normal processes for many years before resistance fails, but their sins are now visiting them. Gastro-jejunostomy must go. It will survive, like some of the amputations on the foot, a technical exercise in operative surgery classes and a useful expedient in the occasional case. But it cannot remain in the group of rational and successful operations. The failures of gastro-enterostomy meet us to-day wherever we go.

If gastrectomy is to replace gastro-jejunostomy in ulcer treatment it must be equally safe and far more satisfactory. It is the purpose of these remarks to inquire where the dangers of gastrectomy lie, and where its functional results may miscarry, and to attempt to suggest how these dangers may be eliminated and these unsatisfactory results overcome.

The deaths following gastrectomy are usually the result of shock, haemorrhage, peritonitis, or post-operative pulmonary complications. Surgical shock is due, in varying proportions, to prolonged handling, prolonged anaesthesia, and loss of blood. The length of the operation is one of its chief dangers, and is in great measure a consequence of the amount of work that has to be done; the number of planes that have to be dissected, the number of bleeding-points to be tied, the considerable length of cut surfaces that have to be sutured, and the difficulty of access to the upper part of the stomach and the first part of the duodenum. Anything that simplifies the operation will therefore reduce its risk. The functional failures of gastrectomy come under three main headings: recurrent ulceration, post-operative discomfort, and anaemia. Dangers, difficulties, and failures are so closely linked that to discuss each separately will lead to repetition. I prefer, therefore, to examine various phases of the operation from each point of view, taking them roughly in the order in which they are encountered.

The Anaesthetic

All drugs used for general anaesthesia, with the exception of nitrous oxide, are tissue poisons in varying degrees. Administered alone in sufficient concentration or for sufficient periods they can cause shock; in combination with prolonged handling they are bound to do so. Any form of general anaesthesia, whether basal or by inhalation, is therefore prohibited to the surgeon who wishes to bring his mortality for gastrectomy below that of gastro-enterostomy. High spinal anaesthesia has its advocates, from whose number I would at present exclude myself. For work at the level of the diaphragm a spinal is too uncertain to be satisfactory, and has too profound an effect on blood pressure to be safe.

There remains, therefore, only local anaesthesia, alone or in combination with gas and oxygen. The suggestion of carrying out an operation of this magnitude on a conscious patient may sound brutal; I can only say watch, and then try it. Premedication is, of course, necessary, not to dull pain, but to relieve apprehension and restlessness. No patient, entirely undrugged, could lie still in one position on an operating table for the one and a half to two hours that a high gastrectomy takes in the hands of a surgeon of moderate ability. I give omnopon 1/3 grain one hour before operation, followed by morphine 1/4 grain and atropine 1/100 grain half an hour before; in most cases no more is required. This medication brings the average patient to the theatre calm, but not sleepy, able to lie still, but also able to answer questions or to feel any handling of tissues not anaesthetized. In five cases in the last 120—two in hospital and three in private—I have used gas and oxygen in addition. Gas may be necessary to allay nervousness during the early stages, but it is better avoided. The increased respiratory movements add to the surgeon's difficulties, and therefore prolong the operation; the slight cyanosis that often appears provokes oozing from small vessels that do not bleed under local anaesthesia.

Of the effectiveness of local anaesthesia—that is, abdominal field block followed by splanchnic infiltration—there can be no question. Pain is entirely abolished, relaxation of the abdominal walls is complete, respiratory movements, under the influence of morphine, are slow and shallow, the blood pressure is not raised, and the capillaries not dilated, so that the tissues present their normal appearance and there is no oozing apart from cut vessels. In these circumstances the technical part of the operation is simplified to a remarkable extent, and any surgeon can more than save the twenty minutes necessary for inject-

ing the anaesthetic. More important is the complete abolition of shock. The pulse may rise twenty beats per minute by the end of the operation, but its volume is usually unaltered ; there are, however, many patients in whom no change in pulse rate whatever takes place, either during or after the operation, and in whose chart there is no variation to mark the date of the gastrectomy. Patients may die after local anaesthesia from various causes, but none die, or look like dying, in the first three days. Here, again, proof is better than assertion, and I should advise any sceptic to spend a week with Finsterer, or to watch a surgeon using the method in England. One who came to see me went away remarking that he could do the operation himself in half the time ; but that was a criticism of my skill, not of the anaesthetic. I should have preferred him to avoid the theatre altogether and visit the patient in the ward six hours after the operation. He would have been convinced.

A further advantage of local anaesthesia is in the immediate post-operative stage. None of my patients have axillary salines or infusions ; some have water and glucose by the rectum, but they can take all the fluids they require by mouth.

The Incision

The two parts of the operation of high gastrectomy where access is most difficult and accuracy most essential are those concerned with the left gastric artery and cardiac end of the lesser curvature on one side and with the duodenum on the other. A right or left paramedian incision will favour one region and put the other out of reach ; neither is high enough, for the centre of the highest paramedian incision of adequate length lies well below the level of the coeliac axis. I prefer the median incision. This may have drawbacks below the umbilicus, but above it has none. It is bloodless, it allows free access to the highest part of the subdiaphragmatic space, and it gives a scar of great strength afterwards. There is never any necessity, in gastrectomy, to go below the umbilicus ; upwards the incision may be prolonged to the left of the xiphisternum, when it extends a good two inches higher than the paramedian can do.

The Separation of the Great Omentum

Of the surgeons whom I have watched at work only one has kept in view the anatomical problems connected with the omentum. It must be remembered that the great omentum is a pouch developed from the posterior mesogastrium. It carries, and is supplied by, the arteries which bring blood to the greater curvature of the stomach (Fig. 1), and its association with the transverse colon and mesocolon is a matter of physiological adhesion, only established during the later months of foetal life. The omentum appears to spring from the transverse colon, but no anastomosis ever develops between its vessels and those of the large intestine. The common technique of gastrectomy, in which the vessels of the omentum are tied off about two inches from the greater curvature of the stomach is therefore anatomically wrong and technically a waste of time. It is wrong, because the division of these vessels cuts off the whole of the omental blood supply, and the fringe which remains is a bloodless fat graft—destined to become fibrous and promote adhesions. It is a waste of time, because this devascularization of the omentum adds some ten minutes to the operation, and does harm rather than good.

Consideration of the blood supply of the omentum suggests that it should either be detached from the colon and removed in one piece with the stomach or, if it is left behind, that its blood supply should also be left. Till the last few months I have adopted the first course in every gastrectomy. The first step in the operation is to hold the omentum and colon apart, and run a knife along the bloodless plane between them, which is close to the wall of the colon. The old plane of physiological adhesion being opened up, it is a simple matter to separate it down to the posterior abdominal wall with a gauze swab, when the foetal condition is re-established—above the posterior mesogastrium with the omentum, below the transverse mesocolon and colon. If the correct watershed is opened, as it usually can be under local anaesthesia, there are no bleeding points. The only ligatures required are at the two ends of the gastro-epiploic arch, one at the origin of the right vessel from the gastro-duodenum, the other near the spleen (Fig. 4).

During the last two months I have developed a very much simplified form of gastrectomy for the treatment of ulcers, which, for want of a better term, I call " physiological gastrectomy." This operation, by avoiding the

FIG. 1.—The blood supply of the stomach and great omentum.

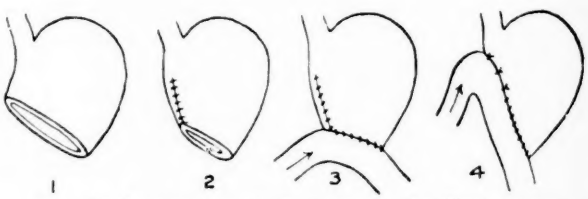

FIG. 2.—Construction of the stoma in the Finsterer non-return gastrectomy.

duodenum, saves at least twenty minutes. This saving of time, and the consideration that the operation is planned for acid reduction and not for malignancy, have prompted me to leave the omentum. In this case, then, the arteries and veins to the greater curvature of the stomach are tied between the stomach and the epiploic arch, so that the whole omentum and its blood supply are detached from the stomach (Fig. 6). The vessels requiring ligature are more numerous inside the arch than below it, but the operation nevertheless remains a shorter one.

The Duodenum

The duodenum is one of the chief hazards of abdominal surgery, and I believe that it should be avoided whenever this is compatible with surgical principles. It has many dangers peculiar to itself. It has a thick, friable, muscular wall, which holds stitches badly and infolds with difficulty. It has a very abundant supply of vessels coming from various sources. The most troublesome are the group entering it from the pancreas, which must be

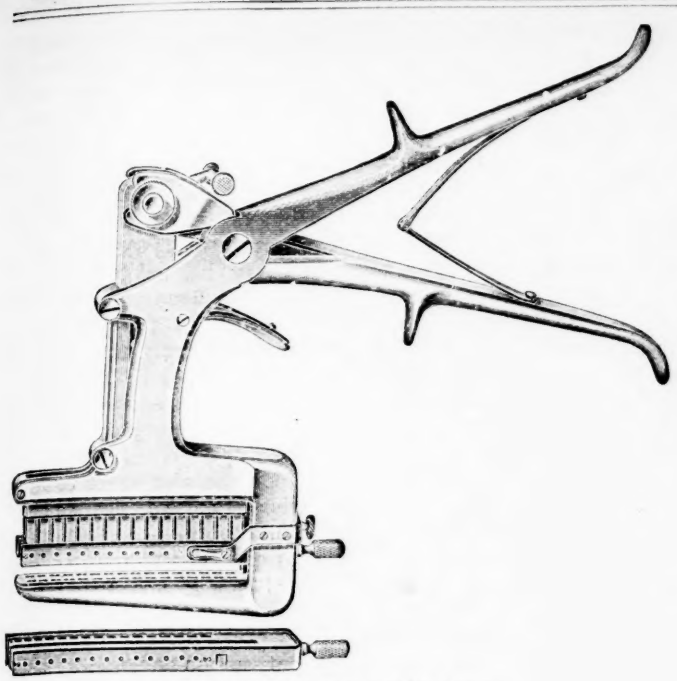

FIG. 3.—The Friedrich-Petz sewing clamp.

FIG. 6.—The parts to be removed in gastrectomy for ulcer.

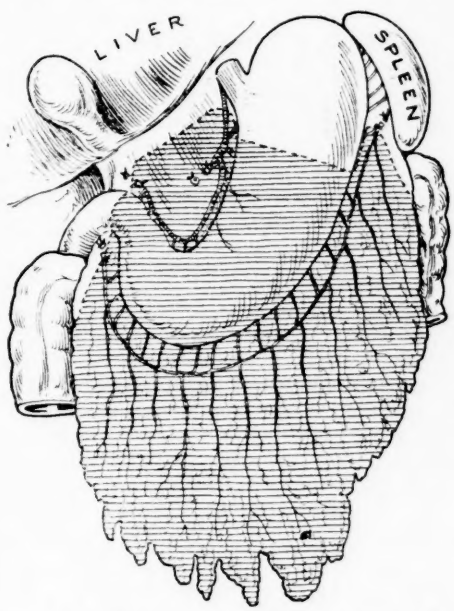

FIG. 4.—The parts to be removed in gastrectomy for cancer.

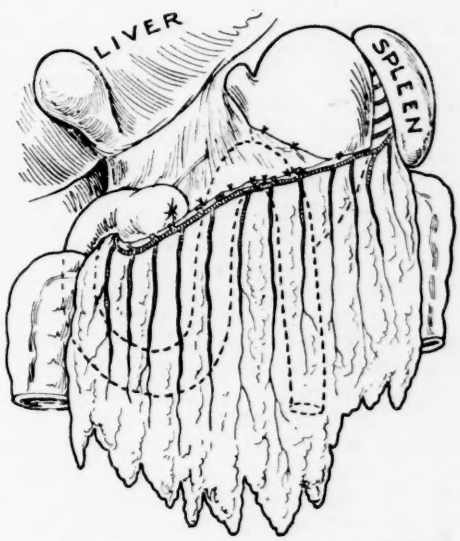

FIG. 7.—Gastrectomy for ulcer completed.

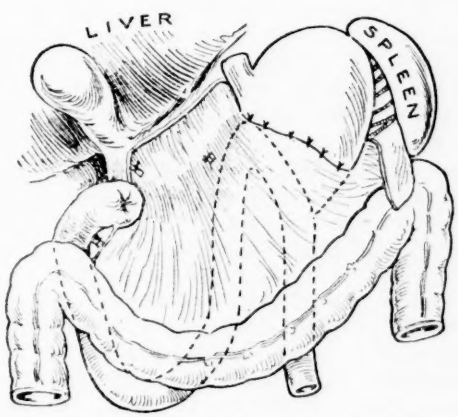

FIG. 5.—Gastrectomy for cancer completed.

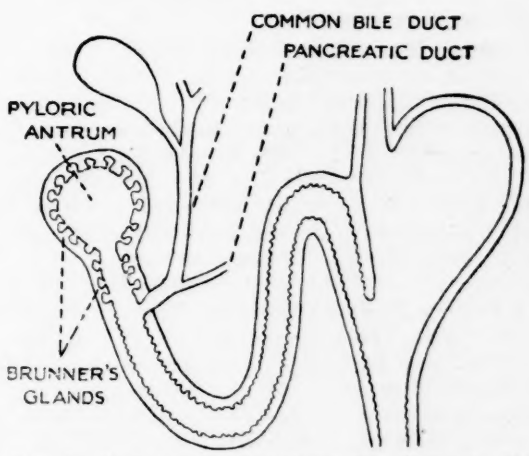

FIG. 8.—Diagram of gastrectomy for ulcer, to show maximum alkali conservation, and protection of the afferent loop against regurgitation.

secured by a number of small ligatures before enough of the wall is mobilized to allow for safe occlusion or anastomosis: in these ligatures a certain amount of pancreatic tissue is inevitably included. It receives the most powerful proteolytic ferment in the body. For this reason, perhaps, the duodenum is very prone to perforate after quite minor trauma. Most duodenal perforations, in my experience, are of this nature—small holes with much surrounding oedema, but no real scar tissue, suggesting that they are acute traumatic rather than chronic peptic ulcers. Many of us must have encountered such perforations following a blow on the abdomen some days previously. A year ago I lost a patient a week after gastrectomy for cancer, from peritonitis following a duodenal leak. The hole was a very small one, nearly an inch beyond the closed end, where no stitches had been inserted or vessels tied, and it probably marked the site of some small instrumental injury during the operation. The duodenum cannot be controlled satisfactorily by clamp, and it cannot be sutured to the stomach without displacing it from its bed.

For these reasons I have always disliked and dreaded that group of operations which include remodelling or anastomoses of the duodenum—Finney's operation, the Mayo duodenal excision, gastro-duodenostomy, pyloro-duodenal excisions with end-to-end or end-to-side anastomoses, and the various descendants of the Billroth I gastrectomy, the Schoemaker and the neo-Billroth of Haberer. I am confirmed in this dislike by the course of the few I have done, by the observation of a larger number in the hands of my friends, and by the complete failure of these operations to establish a secure place in surgery, in spite of the brilliance and persistent eloquence of their supporters.

Duodenal occlusion is less dangerous than duodenal anastomosis, and in gastrectomy for cancer it is absolutely necessary. My only observation on this step—in addition to the point I have already made that the wall must be separated from the pancreas for a sufficient distance to allow section at least three-quarters of an inch beyond the pylorus and a double row of infolding sutures—is that a simple purse-string is quicker and safer than the row of infolding sutures usually advised. I crush the duodenum at the point selected for division, tie it firmly with a silk ligature in the crushed groove, and then put in a purse-string of the Lane type (passing from III to IX on the pancreatic side, and then from III to IX on the outer side). An Ochsner clamp is then put across the duodenum proximal to the silk ligature, the knife passed between clamp and ligature, and the closed end immediately tucked into the purse-string. A second purse-string, which takes up the cut edge of the peritoneum on the head of the pancreas, is tied over the first.

The method is as safe as duodenal occlusion can be, but there remain the two risks of leakage and pancreatitis. Neither has yet happened to me, but both are real. Two of my patients have died from subacute pancreatitis about a week after gastrectomy. In each case the operation was for a large posterior gastric ulcer invading the pancreas, but I am certain the same risk is inherent in the necessary separation of pancreas from duodenal wall which occlusion requires. Were duodenal closure a necessary part of gastrectomy for ulcer this risk would have to be faced. After a prolonged period of doubt, I have come to believe that it is neither necessary nor wise.

In gastrectomy for gastric ulcer, or the common type of duodenal ulcer close to the pylorus, closing the duodenum presents much the same problems as in cancer. It may be a little more difficult because of oedema. But when the duodenal wall is widely scarred from old ulceration, or there are many adhesions round it, the same step may be very difficult, and with a posterior duodenal ulcer it may be extremely hazardous, or even impossible. Is it necessary at all? It is well known that a duodenal ulcer will nearly always heal after gastro-jejunostomy alone; it will also remain healed unless the stoma becomes narrowed from oedema or ulceration, and acid once more starts to flow over the site of former ulceration. If the access of acid gastric juice is entirely and permanently prevented by division of the pyloric end of the stomach a duodenal ulcer will heal and remain healed without any question. A healed ulcer is every bit as good as an excised ulcer; each is a harmless scar. Transverse division of the stomach two inches proximal to the pylorus is therefore quite as efficacious in gastrectomy for ulcer as the conventional duodenal occlusion; it has the advantage of saving from eight to twenty ligatures, a good deal of difficult dissection and a good deal of time, and of avoiding any risk of leakage or post-operative pancreatitis. (Fig. 6.) But section at this point is also more certain to obtain that objective whose pursuit is causing gastrectomy to replace gastro-jejunostomy—the elimination of any tendency to future ulceration. Recent research has shown that the secretion of Brunner's glands, which distinguish the submucous layer of the pyloric antrum and first part of the duodenum from other parts of the upper alimentary tract, has a potent action in neutralizing acid.[1,2] In the standard type of gastrectomy this secretion is sacrificed; in prepyloric section it is retained.

The Amount of Stomach to be Removed

Whether the operation be for cancer or ulcer, the removal of stomach must be thorough, at least three-quarters being taken away. In the first case our aim is to remove tissues that may possibly have been invaded by the growth; in the second, to reduce the area of acid-producing mucous membrane sufficiently to ensure that the acid level is kept below that at which fresh ulceration can occur. Acid is produced in the fundus and body of the stomach, and from this point of view alone there is no advantage, and indeed a certain loss, in taking away the pyloric antrum. A three-quarter gastrectomy leaves all the oxyntic glands of the fundus, but it has been shown, by repeated fractional test meals done years after the operation, that the acid secretion remains permanently at a minimal level. The same cannot be said of a more limited partial gastrectomy, or the timid type of resection which is still occasionally performed under the name of "pylorectomy." After this operation, as after gastro-jejunostomy, the acid curve is often found to be higher than it was before, once the depressing effect of the operation has worn off, and recurrent ulceration is only too common.

If gastrectomy is done at all, it must be thorough. On these grounds, in addition to the dangers connected with duodenal anastomosis, the Billroth I type of gastrectomy stands condemned. Sufficiently radical removal of gastric tissue prohibits the junction of the stomach to the duodenum without an amount of tension which adds to the dangers already inherent in such an anastomosis.

In connexion with high division of the stomach we must touch upon the ligature of the left gastric or coronary artery. This artery is the principal, almost the sole, supply of the lesser curvature. The right gastric or pyloric artery of textbooks is apparently a mythical structure. When clearing the duodenum for section we encounter in its place a leash of small vessels, coming mostly from the hepatic artery, which spread fanwise in the lesser omentum to supply the duodenum and pylorus in this neighbourhood. The left gastric is not only the main source of supply of the lesser curve, but it anchors the upper part of the stomach to the posterior abdominal wall, and it is surrounded by the lymphatic glands, which drain this part. Ligature of this vessel near its origin is

essential in cancer surgery, because only after such ligature is it possible to clear the lymphatics right up to the oesophageal opening in one piece with the stomach. High ligature is necessary on grounds of function as well, because after a Polya gastrectomy the remainder of the stomach must be free to lie in a new plane and move in a fresh axis. The normal stomach is slung like a hammock between its two openings; the left gastric artery springs from the centre of this arc, and is never pulled upon. The resected stomach hangs like a pendulum, vertically from the oesophagus and the peritoneal ligaments round the oesophageal opening. If the left gastric artery retains any attachments with the lesser curve it becomes an anchor, limiting movements. A good many cases of post-operative discomfort are, I believe, referable to such fixation.

This point may seem elementary, but, judging from the practice of many surgeons and the illustrations of surgical textbooks, the stomach is often drawn directly downwards after division of the duodenum, and the vessels ligatured in the lesser curve. By such a manœuvre, as may easily be shown in the post-mortem room, the branches of the artery are tied, but not its trunk. If, on the other hand, the stomach is thrown upwards towards the left shoulder of the patient, the main artery is put on the stretch: a ligature can be passed round it, slid down, and tied close to the coeliac axis. After such proximal ligature the glands and fatty tissue can be cut away, in operations for cancer, right up to the cardiac orifice, and stripped downwards, leaving the lesser curve bare to the point of intended section.

The Type of Anastomosis

I have given reasons for preferring the Polya type of anastomosis to operations of the Billroth I type.

The Polya gastrectomy, however, while safer and more satisfactory, has disadvantages of its own. These are bound up with the double intestinal loop, and with the length of this loop. That four varieties of the Polya gastrectomy are practised, two anterior and two posterior, suggests that there are disadvantages in all. The chief troubles met with are vomiting in the immediate post-operative stage, and distension after meals at a later date. Post-operative vomiting is not frequent, but it is clear from the precautions they take to avoid it that many surgeons are afraid of it. It is the practice in many Swedish and German clinics to perform entero-anastomosis, or even a temporary gastrostomy, to forestall this complication.

Early vomiting suggests obstruction to the efferent jejunal loop. In the anterior operation this may be due to pressure on the loop by a transverse colon loaded with gas, as it often is after any severe abdominal procedure; in the posterior operation it is more probably concerned with the length of the loop passing through the opening in the transverse mesocolon. It is indeed difficult to close the mesocolic opening in a safe manner in the posterior Polya gastrectomy of the usual type without causing some kinking at the anastomosis by approximation of the two loops.

Distension after meals usually appears much later, at a time when the patient has returned to full diet. Anchoring of the gastric pouch by an undivided coronary artery has already been mentioned as one cause of post-prandial discomfort. True distension is, however, a more obtrusive symptom. After a meal of moderate size the patient complains of a sense of fullness in the epigastrium amounting even to pain, and a lump can often be palpated to the right of the midline; the lump and the discomfort disappear only after several hours. This particular trouble appears to be due to food entering the closed duodenal loop. It is not often seen after the Polya-Moynihan operation, because food tends to follow the lesser curvature and enter the efferent loop directly, but I have seen it do so on three occasions. An *x*-ray shows the presence of barium in the whole closed duodenal loop, which is distended to two or three times its normal diameter. Such a state of affairs can only be remedied by an entero-anastomosis, which naturally brings the risk, a small one after a radical gastrectomy, of fresh anastomotic ulceration.

Since I had the privilege of assisting Finsterer four years ago I have adopted his modification of the posterior Polya operation in all cases. In over one hundred I have never met with either post-operative vomiting or distension after meals even in a minor degree. The essentials of the Finsterer operation are that the right half of the cut surface of the stomach is closed by two or more rows of sutures, so that the infolded line reaches nearly to the cardia (Figs. 2 and 8); the jejunum is anastomosed to the remaining half, distal loop to greater curvature, and the proximal jejunum is then attached to the closed part of the stomach, reinforcing the suture line, and interposing a thick valve of gastric and jejunal wall between the outlet of the stomach and the proximal loop. The jejunum now lies almost vertically, and its efferent loop runs downwards in direct continuation of the mouth of the funnel-shaped stomach.

The Suture of Cut Surfaces

The considerable length of the cut surfaces of the stomach, and the laxity of the submucous coat which allows the mucous membrane to pout from them in redundant folds, make either closure or suture of these surfaces difficult and time-consuming. When the epigastric angle is narrow, and the line of section has been a high one, the closure of the right half of the gastric opening for a Finsterer operation may be very difficult indeed if done with hand and needle.

The Petz sewing clamp,[3] which crushes the line of intended section and then inserts a double row of tiny metal clips across the crushed line, has made such suture a job of the greatest simplicity (Fig. 3). The original Petz clamp was a cumbersome instrument, and had to be reloaded between each application. The latest form, which has been made by Heinrich C. Ulrich of Ulm to the suggestions of Neuffer in Professor Friedrich's clinic,[4] is much simpler, and carries the clips in separate magazines, so that it can be used for several suture lines in succession. In physiological gastrectomy the pyloric section is finished with one application of the clamp and a row of Lembert sutures. The Finsterer anastomosis is done by closing the whole cut surface with the clamp and reinforcing the right half of this line with a double row of Lembert sutures: the left half remains closed and clean while the first line of the anastomosis is being sewn, and is only opened up for the haemostatic suture. Further time is saved because the cut surfaces of that part of the stomach which is to be removed are securely closed against leakage.

Closure of the Supracolic Compartment

This can only be done in a really satisfactory manner by sewing the edges of the opening in the mesocolon to the stomach as in gastro-jejunostomy, leaving the whole anastomosis in the infracolic compartment. In Finsterer gastrectomy this means that the mesocolon has to be brought nearly to the oesophagus. A memory of textbook diagrams would suggest that this must involve tension, but in fact it does not do so: the left-hand side of the opening is sewn to the posterior surface of the stomach before the anastomosis is started, the right-hand leaf to its anterior wall after it is completed (Fig. 5). The mesenteric opening in gastrectomy lies well to the left of the middle colic vessels, and there is no danger of wounding them.

In physiological gastrectomy this barrier between the subdiaphragmatic space and the main abdominal cavity is further reinforced by attaching the epiploic loop, carrying the omentum, to the posterior abdominal wall above the anastomosis by three or four interrupted sutures (Fig. 7).

The Immediate Post-operative Period

Many details of post-operative treatment are a matter of individual preference, but the question of fluid administration is one of principle. The balance between fluid in the tissues and the circulation, and the adjustment of this balance in response to circumstance, is one of the fundamental mechanisms of biological economy. This mechanism has been developed, tried, and perfected by evolution through countless ages; our knowledge dates from Starling, and is even now fragmentary and, with some of us, rudimentary. Yet we are quite ready to go at it like a dog at a bone, without any real knowledge of what we are doing. We should, however, remember that shock is essentially a physiological process and only becomes pathological when it runs riot. A blood pressure decreased to a degree that will produce no clinical symptoms of shock is a natural reaction to any injury, and is thoroughly beneficent after a severe operation. While the pressure remains low cut surfaces will come together if not prevented by exuded fluids, and capillary bleeding will cease if not maintained by the pressure of a circulation artificially overfilled and dilated. I have been convinced for many years that the patient who has received axillary saline during the course of an operation may reach the ward with a good pulse, but he is far more shocked two hours later than if he had been left alone. The body can only receive fluids naturally from the alimentary canal; by any other route they are taken under protest rather than accepted willingly.

The patient after gastrectomy under local anaesthesia is never shocked or anything like it. His blood pressure may be at its pre-operative level. It is usually lower, but his pulse is good, his skin warm and dry, his colour normal, and he looks and feels well. To insult such a condition of well-being by forcible feeding, even with fluids, is wrong. Fluids are required, but they may be given by mouth: if a suture line is going to give way it is never less likely to do so than in the first twenty-four hours. Therefore my patients are given a cup of tea, sweetened with glucose, when they get back to the wards; it warms them, cheers and reassures them. Thereafter they may have sterile water by mouth every hour, as long as no more than four ounces are taken at a time. Many of them have tap-water and glucose by the rectum, but this is not given for six hours at least. If any of my gastrectomy cases in the last two years have been given an axillary or intravenous infusion, it has been without my knowledge or consent.

Unsatisfactory Results

The common causes of failure after gastrectomy, post-operative vomiting, post-prandial discomfort, and proximal loop distension have already been dealt with. They can be avoided by the Finsterer gastrectomy. Recurrent ulceration can only occur if the post-operative acid level remains high—that is, after too conservative resection, or if entero-anastomosis has been performed.

Anaemia alone remains to be discussed. Moynihan first drew attention to this complication as a sequel of total gastrectomy, and in the early days of gastric surgery several cases of this complication were reported. It is remarkable, taking into consideration the increased frequency with which the operation is now performed, how few examples of anaemia have since come to light. Hartfall's[5] recent paper on the subject suggests that the onset of anaemia bears no relation to the amount of stomach removed, and is dependent rather on the functional disturbance produced by the operation in the particular case; an equally severe anaemia may follow gastro-jejunostomy. Walters[6] has reported two cases of total gastrectomy, followed for eight months and two years respectively, in which little change took place in the blood picture from that prior to operation. I have not investigated my own cases from this point of view, but in a follow-up of some 140 gastrectomy patients I have found none whose symptoms or appearance called for such investigation. In the absence of gastro-intestinal disturbance the anaemia associated with gastrectomy reacts readily to iron and ammonium citrate by mouth. When we remember that gastrectomy is only performed for cancer, which is otherwise incurable, and for the small proportion of ulcers which are incurable by medical means, we can face the remote chance of an anaemia which is curable without anxiety.

Conclusion

The points I have dealt with are largely technical ones, but taken together they suggest certain conclusions. The chief are: that gastrectomy, whether for cancer or ulcer, must be really high; that the left gastric artery must, in each case, be ligatured at its origin from the coeliac axis; and that the stoma should be a non-return posterior gastro-jejunal one of the Finsterer type. In certain respects, in the point of distal section and in the treatment of the omentum, the operation differs in the two conditions.

For cancer the whole omentum should be detached from the colon and removed with the stomach, the duodenum should be divided at least three-quarters of an inch beyond the pylorus, and the fatty and glandular tissue along the lesser curve should be removed with the stomach right up to the oesophageal opening (Figs. 4 and 5). For ulcer the omentum and the gastro-epiploic vessels which supply it should be left intact, the distal point of section should be two inches proximal to the pylorus, and the lesser curve need not be denuded higher than a point one and a half inches below the cardia (Figs. 6, 7, and 8).

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The fiftieth annual report of the Royal Prince Alfred Hospital, Sydney, contains the good news of the reopening of 200 beds which were closed in April, 1931, owing to financial stringency. Furthermore, the normal bed capacity of the institution has been increased from 530 to 568, which includes twenty-five beds for patients who can contribute part of the cost of their treatment. During the twelve months ended June 30th, 1934, the weekly bed cost was reduced to £3 10s., a "record" low level for a teaching hospital. It is now proposed to construct a new block for paying patients, to contain 159 beds; a new out-patients' department; and a psychiatric block of thirty beds, which will house the department of neurosurgery. The project will cost about £200,000, but it is calculated that some of this expense will be met by the profits from paying patients. The department of pathology is in urgent need of extension; the present laboratories were built in 1880, and enlarged in 1905. The equipment of the *x*-ray department also requires augmenting, but this will be postponed until the erection of the new out-patients' block provides further accommodation. The out-patient attendances during the year reached 192,662, and this huge number has had to be dealt with under much the same conditions as existed thirty years ago.

CLINICAL OBSERVATIONS ON THE USE OF PROSTIGMIN IN THE TREATMENT OF MYASTHENIA GRAVIS

BY

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In June, 1934, Dr. Mary Walker of St. Alfege's Hospital, Greenwich, in a brief letter to the Editor of the *Lancet*[1] made a communication which did not receive the attention it deserved from the medical profession. She explained the rationale which had led her to try the influence of physostigmine on a case of myasthenia gravis. Owing to the antagonistic effect of this drug to the action of curare, and in view of the resemblance between myasthenia gravis and curare poisoning, she decided to see whether physostigmine "would counteract the effect of the unknown substance which might be exerting a curare-like effect on the myoneural junctions." She obtained definite improvement in her case of myasthenia, but was checked in her attempt to give larger doses by the toxic influence of the drug on the alimentary tract. Later, using prostigmin,* she was able to produce an even more striking improvement in a severe case of myasthenia, and she demonstrated her results at a meeting of the Clinical Section of the Royal Society of Medicine on February 8th, 1935.

The pharmacological action of this drug has already been extensively studied by Aeschlimann and Reinert,[2] and its influence on the alimentary tract in man has been particularly observed by Carmichael, Fraser, McKelvey, and Wilkie.[3] These papers give a complete account of what we know at present of the pharmacological effects of drugs of this group; no details are therefore given here.

At University College Hospital Dr. E. A. Blake Pritchard and myself approached the problem of confirming Dr. Walker's work, using different methods, and we both came to the same favourable conclusion. His paper giving objective proof has already been published.[4] The following observations on seven other cases of myasthenia gravis thus bring the total number of successes in the treatment of that disorder with drugs of the physostigmine group to sixteen. Not a single failure has been experienced by either of us up to the present.

Case I

A single woman, aged 28, in May, 1925, suffered from occasional attacks of diplopia, for which she consulted an ophthalmologist. She was very slow in recovering from a typical attack of German measles in December of that year, complaining of general fatigue, and in the following February she was frequently noticed to have a sleepy appearance; this latter was due to ptosis, from which she suffered towards the evening only. In April, 1926, she was still continuing her work as an art student, but was experiencing difficulty in raising her brush to the canvas in the afternoon, and her head showed a tendency to droop towards evening. The following month she had to give up her work, as she could no longer walk more than 400 yards without a rest, and was experiencing difficulty in entering tramcars. She became progressively worse until the end of 1927, when her symptoms reached their maximum; they have since remained substantially of the same nature and degree, with the important exceptions set forth below. During the whole of this period from 1925 she has been under my personal observation.

Since the onset of the disease the menses, which had previously been regular, have become irregular, and there has been a marked relapse in the myasthenia during the ten days preceding the period. From the beginning of menstruation the symptoms improve, and the patient is at her best during the intermenstrual period. She then walks well for about twenty yards, when she tires, develops a waddling gait, and has to rest. She can chew an ordinary meal, but pauses unduly between mouthfuls, and usually holds her closed fist to support her chin while she chews. Diplopia occurs at frequent intervals daily, and ptosis, practically absent in the morning, is slight, bilateral, and intermittent towards evening. During the premenstrual phase she is unable to walk more than a few yards, and sometimes is unable to stand. The severity of the ptosis makes reading impossible, speech weakens at the end of a long sentence, and mastication is extremely difficult. At night she experiences great difficulty in turning over in bed, and cannot sit up from the supine position. These severe relapses have been checked by the administration of oestrin during the past two years, and a communication upon that aspect of the case will be published later. She has received thyroid extract, suprarenal whole gland, suprarenal cortical extract, glycine, and ephedrine. No beneficial result was noticed with any of these, except that the patient claims to have noticed some subjective improvement on ephedrine.

RESULTS ACHIEVED WITH PROSTIGMIN

On February 14th, 1935, I gave her a subcutaneous injection of prostigmin 2 c.cm. with atropine sulphate 1/200 grain. I did not discuss the possible result with the patient, remarking only that it would do her no harm. For ten minutes there was no change, then quite suddenly she complained that her eyes felt very queer, and I noticed that the eyelids were now strongly retracted, giving an appearance of exophthalmos. The external ocular movements, which had been limited to a very small range on attempting lateral deviation, and had been impossible on looking upwards, were now of full range, and did not diminish on repetition. About twenty minutes after the injection I asked the patient to raise her arms above her head. She did this with a sudden jerk, having innervated the muscles too strongly. For many years past she had been unable to raise her arms above the horizontal level and keep them in that position. For the next few minutes every movement she carried out was exaggerated in the same way, but she quickly readjusted herself to the new state of affairs.

She then proposed to test herself by attempting certain movements which had been impossible for many years. From the erect posture she sat down on her heels and got up again without the slightest difficulty. Abduction of the hip, usually impossible when standing, was now carried out freely and repeatedly. Finally, she decided to dance to the wireless, and was able to do this for several minutes. The effect of the drug lasted five hours, after which she gradually relapsed to her previous state. Next day, after 2 c.cm. of prostigmin, she was able to go to the theatre, to reach her seat without difficulty, to walk in the lounge during the interval, and to reach home still stronger than she usually was at her best.

Before treatment the patient's grasp on a recording dynamometer was: right, 15 lb., and left, 10 lb. Ten minutes after 2 c.cm. of prostigmin it was: right, 30 lb., and left, 30 lb. Twenty minutes after the injection it was: right, 37 lb., and left, 35 lb. I have related this case with some detail, as it was the one which enabled me to give Dr. Walker the first confirmation of her work.

Case II

A single woman, aged 26, while attending a gymnasium class in October, 1929, noticed that "week by week she was able to do less and less." The weakness affected all four limbs equally, and the swinging of Indian clubs above her head was one of the first difficulties. For the next few months she was normal in strength on some days, but on others she would suddenly feel weak "when least expecting it." In February, 1930, while out to post a letter, her legs gave way suddenly and she fell down; she was able, however, to pick herself up at once, and to continue her errand. This sudden "giving way" of the legs is an important early symptom of myasthenia, which misleads experienced neurologists into a diagnosis of hysteria, owing to the history of recovery without rest. I saw the patient for the first time in October, 1930, and her state was then as follows. She had a slight permanent ptosis on the left side and a typical "sneering" smile. She chewed

* Prostigmin = dimethyl-carbamic ester of 3-oxyphenyl-trimethyl-ammonium-methyl sulphate. Supplied by Hoffmann-La Roche, Ltd. (1 c.cm. of the solution contains 0.5 mg.)

with difficulty. The speech was monotonous and had a slight nasal quality. The muscles of the shoulder girdle were particularly weak, and the arms could not be raised above the horizontal; the legs were apparently unaffected. Eleven months later she began to get worse, and was hardly able to walk at times. In March, 1932, she was having nasal regurgitation of fluids and attacks of dyspnoea lasting up to two hours, and in the following month she was bed-ridden, unable to raise her head off the pillow or her arms off the bed. She was having frequent attacks of dyspnoea, and when I saw her she had swallowed nothing for forty-eight hours. I advised against the use of a stomach tube, which always increases the dyspnoea in such cases, and on the next day, after a night's sleep, she was able to take two cups of milk with little difficulty. Since that date she has gradually improved. When I visited her on February 14th, 1935, I found that her doctor, Dr. Donald Ross, had independently given her 1 c.cm. of prostigmin on the previous day with good results.

On February 18th she was admitted to University College Hospital, and the following morning I found that she had a well-marked ptosis on the left side, and weakness of both external and superior recti limiting ocular movements to a considerable degree. Her mouth could not be kept shut without support. Her facies showed the typical "sneering" smile, and she was unable to close her lips. Her arms could not be raised to the horizontal, and her grasp was very weak. She was able to walk a few yards before collapsing. I gave her subcutaneously 3 c.cm. of prostigmin with atropine 1/100 grain; ten minutes later she stated that she felt somewhat better, and the ptosis had certainly improved. Twenty minutes after the first injection I gave her a further 2 c.cm. of prostigmin. An hour after the first injection the patient was able to close her lips, to keep her teeth in contact without support, to whistle, and to smile pleasantly. Ptosis was now extremely doubtful. She could raise her arms above the horizontal, walk fifty yards, and grasp the observer's hand so as to produce pain.

Case III

The patient, a married woman aged 47, first experienced diplopia in 1924 when she saw two balls while playing golf. Soon after she developed ptosis on the left side, the symptoms being always worse towards evening. In 1925 her speech had a nasal quality after prolonged talking, and sometimes she became mute and required several minutes' rest before she could resume conversation.

She has had some dysphagia with nasal regurgitation, especially of fluids, almost continuously. Chewing is always difficult, and she lives entirely on slops. Her limbs have been affected to a much lesser degree, her arms being sometimes weak, especially during the cold weather, but never strong enough to enable her to play the piano. Her legs have remained comparatively unaffected. In 1927 she lived in South Africa for eight months, where she sun-bathed a good deal, and improved considerably without any other treatment. She has been treated for long periods by thyroid extract, injections of gold salts, and ephedrine by mouth. Some slight improvement followed the gold injections, but no method of treatment has so far given any objective results.

At examination on February 20th, 1935, she had a nasal voice, which tired quickly; her soft palate moved very little, even after rest. There was a well-marked ptosis on the left side, but the external ocular movements were full at rest and on repetition, although she experienced diplopia on looking upwards. The left side of the face was definitely weaker than the right, an unusual feature. Whistling was impossible.

Prostigmin 2 c.cm. and atropine 1/200 grain was given subcutaneously. The patient knew that benefit was expected from this treatment, but she was given no indication of the time required for the drug to act. Seven minutes after the injection she declared that her speech felt easier, and it was clear that her voice was improving. Eleven minutes after it she was able to whistle for the first time in ten years, and twenty minutes after the injection the right eyelid became retracted, the left ptosis was improving, and the face was quite symmetrical on smiling. She drank her tea without any suggestion of nasal regurgitation, and declared that it was "nice to be able to swallow straight." She also expressed her delight at being able to talk with her mouth full! An hour after the injection there was no sign or symptom which would have led to a suspicion of myasthenia.

Case IV

A married woman, aged 52, was treated at the London Hospital in 1902 for difficulty in speaking, dysphagia with nasal regurgitation of food, and weakness of her arms and legs. Since the onset of the illness she has gone through seven pregnancies, and that aspect of the case has already been reported.[5] On February 21st, 1935, her condition was as follows. She was seen in the evening, and she then had a slight ptosis. External ocular movements, full at first, rapidly tired, and squint and diplopia developed; the closure of the eyes was very weak. She could raise her arms above her head, but could not keep them there for more than a few seconds. Whistling was impossible. There was great tiredness on walking after 200 yards.

Prostigmin 2 c.cm. and atropine 1/200 grain was given subcutaneously. After eight minutes a little belching occurred and tears came profusely. The patient complained of feeling somewhat giddy and of excessive salivation. Twenty minutes after the injection she held her arms above her head for five minutes without difficulty, diplopia could not be induced, and she was able to whistle with ease. An hour after the injection she felt better and stronger than she had done for years. Duration of the improvement was three hours.

Case V

A single woman, aged 34, had some diplopia in 1924 when she worked as a cinema attendant. She changed her occupation and the symptoms cleared up. In 1929 there was weakness of the hands; she had difficulty in getting on buses, and dropped objects frequently. There was apparent recovery until a year ago, when intermittent ptosis, worse in the evening, developed. The patient's arms tired readily, but her legs only after walking a mile or so. Since taking ephedrine there has been some improvement.

Before the injection of prostigmin there was marked right ptosis, with the typical "sneering" smile, and great weakness of the orbicularis oculi. The grasp of the right hand was 27 lb. and of the left 26 lb. Prostigmin 2 c.cm. with atropine 1/200 grain was given subcutaneously; ten minutes later the patient experienced a "feeling of tightness around the eyes." Within fifteen minutes of the injection the ptosis had disappeared and could not be induced by looking upwards repeatedly, closure of the eyes was of normal strength, and the smile was very much improved. The patient's right grasp was 32 lb., and the left 31 lb.

Case VI

A market gardener, aged 50, has been treated with insulin for diabetes mellitus since 1930. In 1926, while in New Zealand, where he was born, he suffered from drooping of the right eyelid, which was better after rest and worse after exertion and in the evening. This symptom lasted a few months and cleared up following "electrical treatment." This unilateral ptosis recurred in August, 1934, and has persisted, with the same variations as before. Weakness of closure of both eyes was the only other physical sign. On February 22nd, 1935, there was a well-marked ptosis on the right side with some lid retraction on the left. Prostigmin 2 c.cm. with atropine 1/200 grain was given subcutaneously; ten minutes later the ptosis was very slight, and in thirty minutes it was absent. Closure of the eyes was then of normal strength.

Case VII

The patient in this case was an unemployed man, aged 28, who eight years ago began as a typical case of myasthenia gravis. His first symptom was ptosis, which was always worse in the evening than in the morning. He experienced occasional diplopia, difficulty in mastication, and nasal regurgitation of fluids. Two years after the onset his arms became heavy and weak. Since then his condition has been stationary, with no spontaneous remissions. He has had an extensive course of ephedrine, without showing any signs of improvement, subjective or objective.

On February 19th, 1935, I examined him and had the advantage of Dr. J. Purdon Martin's opinion on the case. The patient was a thin man, with marked ptosis and bilateral facial weakness. The external ocular movements were practically absent. On attempting to smile the corners of his mouth were raised slightly, but there was no lateral move-

ment of his lips. The muscles of his shoulder girdle showed definite wasting, particularly the spinati. There was a general diminution in size of all the limb musculature, and the tendon reflexes were all unobtainable, in spite of the fact that the power of the limbs was good and could not be tired by ordinary exertion. We were thus dealing with a case of muscular dystrophy, which had shown myasthenic features in the past.

The only hope was to see whether there were still some myasthenia which might be removed with prostigmin. He was given 2 c.cm. with atropine 1/100 grain. Twenty minutes later, as there was no response, a further 2 c.cm. of prostigmin was given. The only result obtained was that half an hour later the patient was able to whistle, a feat of which he had not been capable for many years. The ptosis on the left side was relieved sufficiently to enable him to clear his line of vision without tilting his head backwards. The experience with this case suggests the obvious help which prostigmin may give in the diagnosis of early and slight cases of myasthenia gravis.

Discussion

The patients in the cases described have all received some previous treatment, and any apparent improvement noted before was slow, subjective, and never beyond doubt. Those in Cases I, II, III, IV, and VII had received injections in the past, and all declared their disappointment with them as a method of treatment. The element of suggestion with prostigmin injections can therefore be discounted. The patients in Cases I, II, III, V, VI, and VII have been taking ephedrine for long periods, and they derived only slight and doubtful benefit, while those in Cases I and II have been treated with deep *x*-ray therapy to the thymus with no unequivocal result. Thyroid extract intermittently was given in Cases I, II, III, and IV, but there was no improvement of any kind. In Cases I and III injections of gold salts were given, and some subjective improvement resulted after a few weeks. Finally, the patients in Cases I and II have taken glycine in doses of 30 grams daily for a month without the slightest benefit.

An injection of saline was given later in Case II when the patient expected prostigmin. Her annoyance at the apparent failure led me to give up this method of control, which was also open to the criticism that lack of the subjective sensations induced by prostigmin might influence the patient. The evidence for the action of the drug was better provided by my observations that in any particular patient grading of the size of the dose of prostigmin, without the patient being aware of the change, caused in strict proportion a shortening of the time before improvement began and a longer duration of the improvement when it was established.

The combination of prostigmin and atropine caused the following mild and transient symptoms: belching, vertigo, lachrymation, twitching of the eyelids, sensation of stiffness about the eyes, photophobia, and perspiration. They occurred between twenty and thirty minutes after the injection, and never lasted more than a few minutes. The patients were all satisfied that the ultimate result overshadowed any initial unpleasantness. Owing to the belching I have avoided giving the injections either just before or just after meals.

I have had an opportunity of testing another drug of the prostigmin group—namely, methyl-phenyl-carbamic ester of 3-oxyphenyl-trimethyl-ammonium-methyl sulphate, supplied by Hoffman-La Roche, Ltd. I was surprised to find that although Aeschlimann and Reinert[2] have shown that it has no anti-curare action, the "anti-myasthenic" effect was little short of that of prostigmin. In Case II 5 c.cm. was given without atropine. The action was slower in its onset, and the duration of the improvement was only three hours. The photographs (Figs. 1 and 2) show the effect of this drug. To a case, not described above, 5 c.cm. has also been given, and the effect was similar, with slower onset and shorter duration.

FIG. 1.

Case II.—Before treatment. Maximum effort to shut mouth and open eyes.

FIG. 2.

Case II.—One hour after 5 c.cm. of the methyl-phenyl-carbamic ester of the prostigmin group.

The experience gained indicates that prostigmin will be of the greatest value in the treatment of myasthenia. Its use is obviously indicated in severe cases with dyspnoea. When dysphagia is present the general condition of the patient will be much improved if the drug is used so as to make one good meal a day possible. Finally, administered in small doses of 1 or 2 c.cm. in the milder cases it will enable the patients to lead a more pleasant life. The possibility of continuous relief of symptoms by repeated injections or by oral administration is under consideration, but caution is needed until the mechanism involved is understood more fully.

Summary

1. The action of prostigmin on seven cases of myasthenia gravis is described. All of these had previously been for some time under the writer's care.

2. The beneficial results in every case, though lasting for only a few hours, have far surpassed anything experienced by the patients with other methods of treatment.

3. Unpleasant symptoms have been of a very mild nature.

4. Another drug of the same group, which has no anti-curare action, has been found to have definite anti-myasthenic properties.

I am indebted to many colleagues for valuable help: to Dr. Mary Walker, who discussed with me freely and generously all her previous experience; to Dr. F. M. R. Walshe, Dr. E. A. Blake Pritchard, Dr. Charles D. Hatrick, and Dr. Donald Ross for access to their cases; and to Messrs. Hoffmann-La Roche, Ltd., for supplies of the drug.

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TREATMENT OF CELLULITIS, SUPPURATION, AND BURNS

BY

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With the ever-increasing numbers seeking surgical attention in the out-patient departments of the large hospitals forms of treatment which reduce both attention and attendances, without any reduction in efficiency, may prove of interest. In every surgical out-patient department sepsis in its many and varied forms constitutes a big factor in time and treatment, and it is in this direction that I have sought to improve my methods.

To me there seemed little doubt about the benefit of the closed method of treating sepsis of bone, whether acute or chronic, and it seemed quite logical to extend this idea to the treatment of other septic lesions. I have now done so for over two years with such consistently good results that I feel certain others might find its adoption equally useful.

General Considerations

Looking carefully at any septic lesion, such as a whitlow, and watching the steps of natural cure, it becomes clear that only slight changes in our interpretation of the successive happenings in such a lesion will lead us to drop some of the older forms of treatment whilst we retain and progress with others. From the moment organisms invade the tissues blood and lymph congest the areas affected. In an immobile area that is all that immediately occurs, but if the lesion so created extends to, or is affected by, a moving part the peripheral sympathetics are activated and the part is rendered immobile, or as nearly immobile as unaided tissue can render it. Next it is noticed that localization and defeat of the invading organisms proceeds under high tissue tension, both in and around the lesion, and not till the situation is safe does necrosis appear in the overlying tissue, pus be evacuated, and repair begin. Further, it is interesting to note that, once spontaneous discharge has taken place from a lesion, no large quantities of debris are again extruded unless some dead material or slough has still to be cast out. Keeping these few observations in mind, I shall discuss treatment.

The Purpose of Pain

In the everyday types of tissue infection met with it seems quite unnecessary, and probably unwise, to attempt to improve the supply of blood and lymph to the area. It is true that by congestive methods the site of certain lesions can be rendered immobile by virtue of the extreme tension in the part, and thus relieve pain; but it is doubtful if such methods are scientifically warranted. This raises the problem why pain is present at all, and what is its purpose. Perhaps the most striking evidence as to the purpose of pain in the presence of sepsis is seen in such a case as osteomyelitis of the proximal end of the tibia. Here the pain experienced is often intense, but if the limb is placed in a plaster case, which completely immobilizes foot, ankle, and knee, the sepsis may progress without having pain as one of its symptoms, and that without touching either bone or tissue surgically. That being so, the purpose of pain is to render certain that voluntary action will not destroy the immobilization of the part which the peripheral sympathetics are attempting to secure. I am convinced that as an agent in tissue healing too little attention is paid to the factor of immobilization.

Incision and Drainage

I now pass to the stage where the organismal invasion has been checked and an abscess has formed. There seems little doubt that we can accelerate cure and produce a better cosmetic result in the average case by incision rather than await tissue necrosis. It is true that there is an optimum moment to make this incision—a moment which can best be judged by experience, and is neither too soon nor too late. When it is made it must be adequate, and all dead contents should be removed at once from the abscess cavity. If this is done, there can be no purpose in drainage. To the tissues a drain is no better than a slough, and must be got rid of. In making this statement I do not wholly condemn drainage, but it should only be employed where the opening down to the abscess has been made through such a tissue as muscle, which is immediately going to close. As a useful working rule I might state that, if an opening is made to an abscess by a route which is selected by the surgeon and is not the chosen one of Nature, such an artificial opening requires artificial means to maintain it open. Keeping this rule in mind, drainage is reduced to the minimum.

Whilst on the subject of drainage it is convincing to note that once a purulent collection has broken to the surface of its own accord and the contents have been evacuated there is usually no further profuse discharge unless dead tissue requires evacuation. Rather does a scab form over the opening and the contents are enclosed. Closure of the opening, not drainage, is the indication. Such a closure, however, must simulate that provided by Nature, and allow free evaporation and escape of gases. Thus is brought about the optimum concentration of tissue fluid which best permits of healing. As a final point in the observation of the healing of septic lesions I would recall to mind the abhorrence that Nature has of empty tissue spaces, and where a cavity has formed steps must be taken to see either that it collapses or is made to collapse, and, failing that, to produce tissue continuity by the artificial means of a suitable pack.

Apart from the actual surgical intervention provided for septic lesions, it would therefore seem wise to apply very simple forms of treatment to assist the processes of healing. Immobilization is perhaps the most important factor, and both before and after operation it should receive attention. Not only should this factor be provided by splint or plaster, but the dressing itself should have a splinting action. Further, the dressing must be such that it can reduce tissue spaces yet permit of free evaporation. If these essentials are attended to I can see no use for any of the antiseptic forms of treatment. The ideal dressing at the present moment for all forms of tissue sepsis is undoubtedly the adhesive elastic bandage, and, where this cannot be applied with ease and comfort, the viscopaste bandage. Occasionally it is found that a pustular condition of the skin develops under the adhesive elastic bandage, and where this is so it is necessary to use the viscopaste type.

Cellulitis

In dealing with cellulitis in the surgical out-patient department the bandage is applied so as to cover generously the part involved, and, where it concerns a limb, that part is always completely encircled with the bandage. If a lymphangitis is present the bandage is continued proximally to cover it. The relief of the patient from discomfort is very often almost immediate, and the general physical upset is speedily checked. In a bad case I may see the patient the next day, but with increasing confidence in this form of treatment I find it unnecessary in most cases to see him sooner than from four to seven days. He is warned, however, to report immediately should his

general symptoms increase. At the end of four to seven days the splint or sling is removed and the limb is palpated through the bandage. If no pain is elicited and no fluctuation felt, he is merely asked to report again a week later, when the bandage is removed. Only if a local abscess has formed is surgery required, and quite often no such abscess forms. Frequently, with quite a severe initial cellulitis of the forearm, a man may return to work in four to seven days still wearing his bandage.

Suppuration

Where an abscess has formed, incision is made and all contents and slough evacuated. Where no marked resulting cavity remains, as in fingers, palm, etc., once bleeding has stopped, adhesive elastic or viscopaste bandage is again applied, and a splint if necessary. The patient does not report again at hospital for one week. Difficulty is sometimes experienced by the patient with the oozing of discharge through the elastic bandage dressing. This is best remedied by washing the part once or twice a day with soap and water, an act which in no way interferes with the efficiency of the bandage. Nothing must be applied over the bandage which might hinder free evaporation: the freer the evaporation the less discharge. By this means severe cases of finger and palmar sepsis are treated with remarkable comfort to the patient and with the elimination from the department of those agonized individuals attempting in vain to gain ease from the fleeting comfort of hot arm baths and the frequent application of fomentations. Where the lesion occurs in soft tissue planes, such as the neck or buttock, and, by virtue of surrounding structures or damage to immediate tissue, a large non-collapsible cavity results, I find it wise to pack such spaces. The best pack I have found to be gauze soaked in pure glycerin, and the optimum time for removal of the pack the fifth day. After drying the skin with surgical spirit, adhesive bandage may immediately be applied, or the first dressing may be of dry, sterile gauze, and the adhesive applied only when the pack is removed on the fifth day.

As a last word on the treatment of sepsis by this method, I would encourage persistence with its application until the lesion is healed. In severe and purulent lesions there are moments when one is tempted to stray to other methods, but I have found none that improves progress. A weekly change of the dressing is usually at first required, but later the interval may be prolonged. Between each dressing the lesion should be cleansed with sterile water or surgical spirit.

Application to Burns

For reasons not distantly estranged from those which led me to apply the elastic bandage and splinting treatment to tissue sepsis, I have applied it also in cases of burns, irrespective of the degree. My experience in this direction has been pleasing, and I find the method to have advantages over that of tannic acid, and to possess few disadvantages. It is much easier to apply, particularly in infants, and gives very quick comfort. Like tannic acid it eliminates the absorptive danger and diminishes and shortens the phase of shock. The method I now use is simply to clip away all blisters and apply the bandages. Unless the area is very foul, preliminary cleansing appears to be unnecessary, and hence no anaesthetic is required. As in all treatments involving the use of the adhesive elastic or viscopaste bandage, air must be allowed to circulate freely about the area involved. Where the patient is so burned that he must be admitted to hospital, he is treated in a hot-air bath with the bed coverings so arranged that free through circulation of air is possible. If the whole of the lower limbs are involved, they are slung to the cage so as to prevent the posterior surfaces from lying in contact with the bed and thus hindering evaporation. Immediately the shock phase is over the bandaged areas are exposed to the air without bed covering of any sort. Tissue fluids are allowed to exude through the bandages, there dry, and only when excessive need they be removed. By treating these cases uncovered by bed-clothes, whether in the ward or out in the open air, little or no inconvenience is experienced from odour. On an average I leave the first bandaging in place from two to three weeks in the out-patient department and from three to six weeks in the hospitalized case, the length of time depending on the degree of burn present. The deeper the burns the longer the application should be. Epithelialization is a more rapid process by this method than in the presence of the eschar of tannic acid and the problem of sepsis much less difficult to manage. After the first bandages are removed, only raw areas are re-covered, and many of these require merely patches of adhesive bandage. It is found advantageous to dry up the burnt areas at each dressing with a hot-air dryer before the application of bandages, but this is only essential where strips of the bandage cannot otherwise be made to adhere.

As regards the use of the elastic adhesive bandage and the viscopaste bandage, I find very little to choose between them except that the viscopaste one can be twisted round areas, such as the clefts between fingers, where the elastic adhesive cannot comfortably be applied. The use of these bandages, though apparently costly, is not found to be so. Dressings are very greatly reduced in number, antiseptics are practically eliminated, and the staff consequently liberated for other duties.

A MODIFICATION OF LOTHEISON'S OPERATION

UTILIZATION OF THE SAC IN THE RADICAL CURE OF FEMORAL HERNIA

BY

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Lotheison's operation is generally admitted to be the method of choice in the radical cure of femoral hernia. By its means an aberrant obturator artery can be identified and dealt with ; an excellent exposure of the neck of the sac can be obtained ; the strangulated bowel can be easily inspected and a resection carried out if necessary ; and closure of the wound, and in particular the peritoneum after separation of the entire neck therefrom, is a more perfect procedure than is possible by the femoral route. This operation fails, however, to achieve an adequate closure of the femoral canal. One authority states that, given an efficient closure of the peritoneum, the canal should be left alone, staples, mattress sutures, etc., " doing more harm than good." Surely an admission of failure. The number and variety of the methods mentioned in the literature indicates definitely that the majority of surgeons are of the opinion that the canal *should* be closed.

Most femoral herniae are acquired. The maximum incidence is at about 45 years of age, and it is twice as common in women as in men. The physical condition of these patients is not likely to improve after 45 years, and if the canal is left untreated at operation or inadequately treated a recurrence of the hernia is probable, especially in the type of patient whose intra-abdominal pressure is increasing. The recurrence of femoral herniae is generally estimated as between 4 and 5 per cent. Husted considers it as high as 21 to 32 per cent. The higher figure is probably more accurate. Patients are loath to return for a further operation if the first has

failed until the recurrent hernia gives trouble. If they do return it is frequently to a different surgeon.

In some herniae the femoral canal, even after removal of the sac, is quite small. In these cases tendon or catgut sutures passed through Poupart's and Hey's ligaments above and the reflected fascia over the pectineus below may be sufficient to achieve closure without tension. In most cases the femoral canal after removal of the sac is far from "chink-like." It frequently admits a finger with ease, and an attempted closure by any form of mattress suture means a suture under gross tension. This is rendered inevitable by the anatomy of the femoral canal, and a suture under gross tension is not to be relied upon. It would be interesting to know for how many hours these forcible closures remain closed. A flap of periosteum or deep fascia has been advocated. These are usually too thin to be useful. A flap turned down from the internal oblique, or one turned up from the pectineus, is better in principle. Both methods have the disadvantage of weakening one part to reinforce another, and neither can be rapidly and efficiently carried out at an emergency operation.

In adding yet another method to the long list of those suggested for the closure of the femoral canal, the writer offers as his excuse that the method is simple and efficient. It is inapplicable only in those cases where the contents, bowel, appendix, or ovary are gangrenous and the sac literally an abscess. In such cases the radical cure of the hernia is of secondary importance to the saving of life, and Hey Groves's modification is the method of choice.

Method Advocated

The initial steps are those of Lotheison's operation. Incision is as for inguinal hernia, the external oblique being cut in the same line; the transversalis fascia is then incised and the deep epigastric vessels identified. The next step is isolation of the neck of the sac under direct inspection (Fig. 1). At this stage the conjoined tendon is retracted and the parietal peritoneum incised, the incision passing almost vertically downwards and finishing on the medial side of the neck of the sac. The peritoneum is picked up with forceps, the edges retracted, and the contents of the sac identified. If bowel is strangulated a light clamp is applied across the loop, and attention is directed to the fundus of the sac below Poupart's ligament.

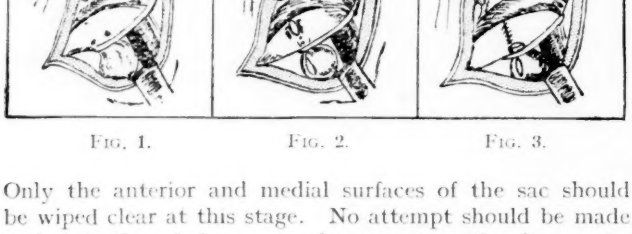

FIG. 1. FIG. 2. FIG. 3.

Only the anterior and medial surfaces of the sac should be wiped clear at this stage. No attempt should be made to isolate the whole sac, as, however tempting it may be to wipe the whole sac clear down to the femoral ring, such manipulation may rupture the contents.

The sac is packed off and a small incision is made on the antero-medial surface. A hernia director is passed into the sac, with its groove directed upwards and slightly medially. In most cases the director can be passed through the neck of the sac until its tip appears at the lower end of the incision in the parietal peritoneum. The two incisions—that in the parietal peritoneum and that on the antero-medial surface of the sac—are now made, one by passing the back of the knife along the groove in the hernia director and cutting medially and slightly upwards. If Gimbernat's ligament is constricting the neck of the sac on the medial side it will be incised (Fig. 2). If the director cannot be passed through the neck force should not be used. By proceeding piecemeal with director and knife the two incisions can be connected. Thereafter the contents are easily released and dealt with as is necessary. The bowel having been returned to the abdominal cavity the neck of the sac is cut through at its junction with the parietal peritoneum, and the peritoneum closed with a continuous suture (Fig. 3). It then remains to deal with the sac and close the wound.

The sac is utilized to plug the femoral canal. Its fundus is wiped clear down to the femoral ring. An artery forceps

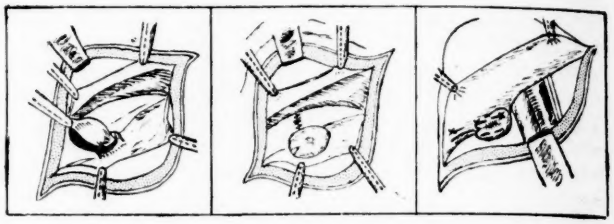

FIG. 4. FIG. 5. FIG. 6.

is passed into the sac from above Poupart's ligament, the fundus is picked up, and, by traction on the forceps, the sac is turned inside out (Fig. 4). The empty sac now lies on the inner surface of Poupart's ligament, between it and the parietal peritoneum (Fig. 5). The attachments of the neck of the sac to the femoral canal have been left intact, except where the incision passes through the medial surface. Viewed from the outer surface of Poupart's is the cuff-like protrusion of the now doubled neck and the small medial incision into Gimbernat's ligament. The neck and the incision is now closed with one or two catgut sutures (Fig. 6). There is never any need for tension on these, as the amount of protruding sac can be adjusted as required. In the majority of cases the sac is sufficiently adherent to the floor of the femoral canal. If there is any doubt as to this the fundus should be stitched down to the pectineus above Poupart's ligament.

The fundus now protrudes on the peritoneal aspect of Poupart's like the head of a rivet, and precludes the possibility of any recurrence. Where infection of the sac is suspected a very small rubber tube is inserted at the medial end of the wound between the edges of the external oblique, and a stab drain is brought out through the lower skin flap. If the sac is very redundant or very thin-walled it may be trimmed or plicated to form a more suitable "rivet head."

Conclusions

The following claims are made for the procedure described above.

1. It is easily carried out in all cases of femoral hernia, except where the sac is an "abscess," when it is inapplicable.
2. It can be more rapidly performed than resection of the sac and attempted closure of the femoral canal.
3. No damage is done to the ring except a small medial incision.
4. The doubled neck fills up the canal, and the edges can be apposed without tension.
5. The fundus forms a "rivet-head" plug at the inner end of the femoral canal.
6. The only weak part—the attachment of the neck to the underlying pectineus—can be reinforced by one or two stitches without tension if necessary.
7. It forms a living graft.

THE KLINE TEST IN SYPHILIS

BY

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AND

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Since serological examination plays so important a part in the diagnosis and exclusion of syphilis, it follows that numerous methods have been devised to facilitate the attainment of these objects. The Wassermann reaction is, in this country, the test in most common use, but elsewhere methods of serological examination of the flocculation and slide-precipitation type have gained equal prominence. The more numerous and diverse the serological tests employed, the more accurate should be the final result. In view of this we have endeavoured to analyse the results obtained from the performance, in a series of cases, of both the Wassermann reaction and the Kline slide-precipitation test. We have later appended a further series in which it was found possible to compare the Wassermann, Sachs-Georgi, and Kline tests, but the number of cases available in this latter group was too limited to admit of any definite conclusion being drawn.

Technique

The technique employed for the Kline test was that of the diagnostic heated serum test, using fresh serum. It should be pointed out that more uniform readings were obtained when the slide was read four minutes after the mixing of the antigen emulsion and the serum had ceased.

Serum four days old gave 12 per cent. error as compared with fresh serum; ten days old gave 55 per cent.; fourteen days old gave 70 per cent.; and twenty-eight days old gave 100 per cent.

Fresh antigen emulsion also gave better results.

Antigen emulsion twenty-four hours old gave 1.9 per cent. error; thirty-six hours old gave 7.8 per cent.; forty-eight hours old gave 9.7 per cent.; and seventy-two hours old gave 92 per cent.

The number of sera examined was 1,801, representing 867 cases attending the Edinburgh venereal diseases clinic and elsewhere. The readings were interpreted on the following basis. A "one-plus Kline" represented the minimum degree of positivity, a "three-plus Kline" represented the maximum degree of positivity.

Results

We append herewith a series of tables showing the results obtained, so that the subsequent conclusions will then be the more easily understood. The percentage figures refer to agreement and disagreement between the Kline and the Wassermann, comprising syphilitic and non-syphilitic cases.

TABLE I

No. of Cases	Type	No. of Tests	Per Cent. Agreeing	Per Cent. Disagreeing
368	Total syphilitic cases ...	799	97.3	2.7
317	Treated " " ...	656	96.8	3.2
51	Untreated syphilitic cases	143	100.0	—
499	Total non-syphilitic cases*	1,002	99.6	0.4
454	Gonorrhoea ... ... "	909	99.7	0.3
25	Tuberculosis...	52	95.0	4.0
20	Dermatological†	41	100.0	—

Note.—The group marked * includes cases of gonorrhoea, warts, herpes genitalis, chancroid, non-specific iritis, tumour of testis, bubonocele, tuberculosis of the kidney, epididymitis, urethral stricture, retinal haemorrhage, glossitis, and venereal contacts. That marked † includes a variety of cases sometimes responsible for a false positive Wassermann reaction.

TABLE II

No. of Cases	Type	Per Cent. Disagreement		Positivity	
		Untreated	Treated	W.R.	K.
70	Primary...	Nil	3.4	60	40
43	Secondary	"	4.0	30	70
130	Latent and tertiary... ...	"	9.0	45	55
81	Neurosyphilis...	"	5.3	10	90
44	Congenital syphilis	"	5.0	10	90

Note.—The column headed "Positivity" requires fuller explanation. The figures under "W.R." and "K." represent a further analysis of the preceding percentage disagreement figures—for example, where the percentage disagreement was 3.4 the ratio of the positive Wassermann reaction to the positive Kline test in the cases showing disagreement was as 60:40.

General Conclusions

The Kline test becomes positive later in the disease than the Wassermann—a result differing from those obtained by Kline and Littman,[1] and the Kline would seem to be less reliable in the earlier stages of the disease. This latter supposition is strengthened by the fact, noted later in a special paragraph, that the Kline test applied to sera taken from suspected primary lesions yielded a false positive error in three out of the seven cases in which no clinical or serological evidence of syphilis was found. Generally speaking, the Kline test remains positive longer than the Wassermann in late cases of syphilis under treatment.

A comparison of Wassermann, Sachs-Georgi, and Kline tests was made by performing all three on fifty specimens of sera representing twenty-five cases. All three tests agreed in twenty cases. In the remaining five cases: (1) Wassermann and Kline agreed in two cases; (2) Sachs-Georgi and Kline agreed in two cases; and (3) Wassermann and Sachs-Georgi agreed in one case.

Sera from suspected primary lesions were also examined. The specimens were taken concurrently and from the same source as those for dark-field examination. Total cases numbered eighteen. Eleven cases showed *S. pallida* present with a strong positive result in both the Wassermann reaction and the Kline test. Seven cases showed a repeated absence of *S. pallida*, but the Kline test gave a repeated positive reading in three cases belonging to this latter group.

Disagreements and False Positives.—We agree with Chargin and Rosenthal[2] that treated cases of congenital syphilis and neurosyphilis account for the majority of divergent results in the sense that the Kline test remained longer positive. This seems to imply either a false positive Kline or the employment of a more sensitive antigen emulsion in the Kline test, and we are inclined to favour the latter view. Our reason for so doing is that the Kline results were confirmed by clinical examination and additional serological tests. In serum taken from suspected primary lesions the Kline test gave a positive reading in three cases where no evidence of syphilis was found either then or during a further observation period of three months. Furthermore, one of our limited number of cases of tuberculosis gave a positive diagnostic Kline reading where no evidence of concurrent syphilis could be found. These results seem to cast doubt upon the efficiency of the Kline test as a medium of diagnosis.

It should be noted as a contrast that no positive results were yielded by either the twenty dermatological cases or the series of 499 cases outlined under non-syphilitic cases in Table I. (This comprises all cases save those in the tuberculosis section.) These facts are of value when the efficacy of the Kline test as a means of excluding syphilis comes to be assessed.

Anti-complementary Readings.—Forty-two tests were performed on twenty-one cases. In cases to which both the Kline test and the Wassermann reaction had been applied initially, and in which the Wassermann result had been anti-complementary, repetition of the Wassermann yielded a result corresponding to the original Kline result in 89 per cent. of the cases. These results are in accordance with the views put forward by Miller[3] and Stewart.[4] We also agree with the latter when he says that the responsibility for a false positive Kline test cannot be attributed to the substance responsible for the anti-complementary Wassermann reading.

Discussion and Summary

An outstanding feature is the absolute agreement of the Wassermann reaction and the Kline test in the untreated syphilitic cases in Table I. We are of the opinion that the Kline test has a definite place in the diagnosis of syphilis, and that on the basis of sensitivity and selectivity it constitutes a suitable adjuvant to, but an indifferent substitute for, a universal test such as the Wassermann. It is relatively simple,[5] rapid, and inexpensive, while only a very small quantity of serum is necessary for its performance; but despite these advantages it seems unsuitable for use save in laboratories (where large numbers of sera are presented for examination at one time), since the antigen emulsion—an expensive item—only retains its efficiency for a relatively short period of time. In addition, considerable practice is essential before minor deviations from the normal can be accurately assessed.

We have already emphasized the specific sensitivity of the test only in that it remains longer positive in the later stages of syphilis under treatment, and in that respect we agree with Kilduffe,[6] who compared his results with the Kolmer modification of the Wassermann—essentially a very delicate test. Our findings also coincided with those of Gray,[7] who found it of value in assessing the result of antispecific treatment. Osmond and Hughes[8] remark that it is predominantly an eliminating test rather than a diagnostic one, and with these views we are in accord. They suggest, also, that it be used as a serological index in testing for cure. Allusion has already been made to the use of the Kline test where the Wassermann has given an anti-complementary result.

We might add that the test was repeated in all our cases which showed disagreement with the Wassermann, since our experience was similar to that of Kilduffe in regard to the possibility of results occasionally varying with the use of different serological tests.

We hold, therefore, that the Kline has its chief value: (1) in the later stages of syphilis under treatment; (2) in cases where it is especially important that syphilis should be excluded—for example, interstitial keratitis; and (3) as a general supplement to the Wassermann reaction.

Our best thanks are due to Drs. Logan, Batchelor, and Smeall for their valuable advice, and to Dr. Elder for kindly allowing us to include certain cases of tuberculosis in our series.

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ABDOMINAL HYDROCELE

WITH RECORD OF TWO CASES

BY

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On perusing the literature I can only find reference to thirty-six previously recorded cases of this condition, which is therefore of sufficient rarity to warrant publication of my cases, particularly in view of the prominence lent to the disease by the recent appearance of two other published accounts.

CASE I

The patient, a tall, thin man, aged 30, of the Buganda tribe, was admitted to the C.M.S. Hospital, Ngora, Uganda, on October 29th, 1930. He gave a five-years history of a swelling which started in the upper part of the right side of his scrotum, gradually increased in size, and spread to his abdomen.

On examination the right side of his scrotum was distended by a large hydrocele, which was evidently continuous with a large abdominal tumour. The latter resembled in appearance an eight months pregnant uterus, but could be seen to be lobulated into two parts by a constriction below the umbilicus. When the patient was in the erect position the tumour descended and became more prominent, while the scrotal swelling increased in size. On palpation the abdominal swelling was found to be tense and cystic, and to have a rounded outline. It had a well-defined edge, and was freely movable within the abdomen. Both fluctuation and fluid thrill could be elicited between different parts of the tumour and between the abdomen and scrotum, and fluid could be displaced from scrotum to abdomen and vice versa. Percussion revealed dullness over the tumour and resonance in the flanks. The size of the mass can be appreciated by a study of its boundaries within the abdomen. When pressure was applied over the lower part of the scrotum the upper limit of the abdominal tumour was just overlapped by the costal margin, but when this pressure was relaxed its superior border receded to a point 1 inch below that margin. Its upper limit on the right side was not so high, being only 1 inch above the umbilicus. The tumour extended on the left side to a point 2 inches to the outer side of the left anterior superior iliac spine, and for a corresponding distance into the right flank. There was no tenderness. The right side of the scrotum had the usual tense elastic characters of a hydrocele, but these features became more marked when pressure was made upon the abdomen. The hydrocele was of large size, extending for a distance of 11 inches below the right pubic spine, and the scrotum, whose girth at its widest level measured 19 inches, contained on the left side a slightly smaller hydrocele, which had no communication with the abdomen. A diagnosis of abdominal hydrocele was made and operation advised.

An operation was performed on November 4th, an incision 4 inches long, with its upper extremity at the level of the pubic spine, was made over the upper part of the scrotum on the right side. The tunica vaginalis was exposed and separated from its scrotal coverings with the finger. It was pierced with trocar and cannula, and four pints of straw-coloured fluid were removed. The evacuation of the fluid was accompanied by collapse of the abdominal tumour. After enlarging the aperture in the tunica vaginalis it was possible to pass a finger into the abdominal loculus, but the limits of the hydrocele could not be reached. By means of gauze dissection combined with traction from below, the whole sac was drawn down from the abdomen. It was surprising how easily this separation could be carried out. In the abdominal portion was a completely isolated loculus about the size of a golf ball, which contained fluid of the same yellow colour. The whole hydrocele sac was excised, with the exception of a small portion sufficient to evert and suture with catgut behind the cord. A rubber drainage tube was inserted into the upper end of the wound, and removed after forty-eight hours. A high scrotal incision, 3 inches long,

was then made on the left side. Nineteen ounces of straw-coloured fluid were drawn off, and the hydrocele was cured by excision of the redundant sac and by suture of the remainder in eversion behind the cord. A drainage tube was retained for forty-eight hours. There was no communication with the abdomen on this side. As soon as the patient began to come round from the anaesthetic and gave a cough, a large right inguinal hernia appeared. He was discharged on December 13th with complete cure of hydroceles on both sides, and with no trace of hernia. It is evident that the raw surface left after separation of the sac resulted in adhesions, which effectively closed the hernial aperture.

CASE II

The patient, a man aged about 30, of the Alango tribe, was admitted to the C.M.S. Hospital, Ngora, on June 6th, 1931, with a history of swelling of the right side of his scrotum for three years and of the left side for two years. On examination there was a large hydrocele on each side of the scrotum, whose circumference measured 16 inches, the lower limit of the scrotum being at a distance of 12 inches from the pubic spine.

An operation was carried out on June 9th. Radical cure was performed by means of excision of the redundant sac and suture of the remainder in eversion through a high scrotal incision on each side. The hydrocele on the right side contained 2½ pints of fluid, and the sac was found to extend upwards into the inguinal canal, from which it was separated by traction combined with gauze dissection. On the left side the hydrocele contained 16 ounces of fluid, and, although the sac did not extend into the inguinal canal, the upper part was completely isolated from the remainder as a separate loculus. Immediately after the operation a right inguinal hernia appeared. It is therefore probable that there was on the right side a small protrusion of the sac into the abdominal cavity. When the patient was discharged on July 2nd with cure of both hydroceles it was found that the hernia had undergone spontaneous cure.

Causation

Several theories have been propounded to explain the formation of abdominal hydrocele. Macewen's views[1] can best be summarized by quoting his own words:

"The sac being of peritoneal origin, one ought to consider the possibility of the funiculo-vaginal portion of the peritoneum, instead of terminating on the abdominal side at the internal ring, being carried as a sheath along the anterior aspect of the pelvic portion of the cord, so that this funiculo-vaginal process of peritoneum would be continuous and patent from the testicular covering to the deepest part of the pelvic portion of the cord. When this elongated sac became distended with fluid, a bilocular hydrocele would form, the constriction being made by the aperture in the abdominal muscles through which it passed."

Firth[2] has pointed out that, if this theory were correct, the peritoneum would be raised in front of the sac, and an incision through the abdominal wall would have to divide the peritoneum twice before exposing the sac of the hydrocele. Such a relationship of peritoneum to sac was actually observed by both Coleman[3] and Lasbrey.[4] In Tillmans's case, however, the cyst lay between the parietes and peritoneum.

The most probable explanation, and one which has been supported by Jacobson, Reclus, and Villeneuve, is that distension with fluid occurs in a funiculo-vaginal process which is patent from the scrotum up to the internal abdominal ring. The internal pressure within such a sac causes expansion into the abdomen. Case II was probably a very early stage of this process.

This theory is supported by the following observations: (1) In both of my cases the disease was first noticed in the scrotum, which would at first offer little resistance to expansion. (2) In both cases the scrotal hydrocele was distended to a large size, and was complicated by a hydrocele on the opposite side, which would limit further expansion of the scrotum. (3) The history was of long duration in both cases—five years in Case I and three years in Case II. It would take a considerable length of time to cause sufficient distension of the lower sac to allow of formation of an abdominal loculus by expansion against the intra-abdominal pressure. Moreover, a reference to the literature of the last thirty years revealed that in every published account in which a description of the history could be found the condition had been present for over two years, with the exception of a case described by Richards,[6] who pointed out that the history was unreliable, especially as regards dates. Further, Lakhoti,[7] Coleman, Lasbrey, and Richards all state in their respective papers that the condition was first noticed in the scrotum, with subsequent involvement of the abdomen. It should be admitted that Macewen opposed this theory, on the assumption that the abdominal pressure would make such a course of events unlikely.

Firth drew attention to the congenital peritoneal pouches near the internal abdominal ring, which were described by Rokitansky and regarded by Moynihan as resulting from an aberrant detachment of the gubernaculum to the peritoneum, and believes that in a similar way the gubernaculum may be concerned in the development of bilocular hydroceles. It may be recalled that Moynihan[5] drew a close anatomical and developmental analogy between properitoneal hernia and bilocular hydrocele, and it is on the assumption of this relationship that the varying position of the upper sac of this form of hydrocele is explained.

Differential Diagnosis

In the advanced stage, exemplified by Case I, the diagnosis should offer little difficulty, provided that the scrotum is examined in every case of cystic abdominal tumour in the male. Lewtas,[8] however, pointed out that an early abdominal loculus may be mistaken for an inguinal hernia. The diagnosis rests upon the dullness on percussion of the swelling in the groin, its re-descent without gurgling after reduction, the translucency of the external swelling, and the presence of an area of dullness extending inwards or upwards from the internal ring. The dark pigmentation of his skin renders the test of transillumination of no value in the African native. It is very easy to miss an early abdominal loculus before operation in the examination of such a patient as Case II, but it should be possible to determine its presence at operation if a finger is passed into the upper part of the sac to define its limits before separation.

Treatment

In the textbooks which I have consulted I can find no mention of the treatment. From the variety of operation performed in the past there appears to be no settled method of dealing with the condition. Tapping is merely palliative; injection is dangerous. Drainage which was performed by both Lewtas and Bickle,[9] is liable to result in recurrence. Excision of the sac is evidently the method of choice. I have already noted the remarkable ease with which separation of the abdominal sac in Case I was performed. Nearly all the surgeons who have practised this method of treatment have made similar observations. Coleman and Lasbrey, on the other hand, both considered it necessary, after separating the sac as far as possible through a scrotal incision without withdrawing the fluid, to make a second incision in the anterior abdominal wall to facilitate the

removal. It is probable that, had the fluid been allowed to escape, removal of the sac through the scrotal route would have proved quite a simple matter without need of a second incision. Firth, Richards, and Hermann[10] all excised the sac through an inguinal incision opening the inguinal canal, and each surgeon, after taking away the sac, obliterated the inguinal canal by their various methods of choice.

The operation which I recommend has been already outlined in the description of my cases. No plastic repair of the inguinal canal was performed, and the hernias which resulted when the patients strained immediately after the operation underwent spontaneous cure. It is therefore clear that in some cases, possibly in all cases which have been submitted to the correct after-treatment, no subsequent operation for hernia is needed.

It should be borne in mind by those surgeons who favour repair of the inguinal canal that, although the internal abdominal ring and inguinal canal have been dilated, the condition after removal of a hydrocele sac differs in the following respects from that after excision of the sac of an inguinal hernia.

1. In the former there is no stump of hernial sac and there has been no dragging down of the parietal peritoneum; on the contrary the reverse is the case, for the parietal peritoneum, by being pushed up and compressed, has probably become reduced in area in order to accommodate itself to the altered conditions.

2. After the radical cure of an inguinal hernia there is frequently increased intra-abdominal pressure, whereas after extirpation of a bilocular hydrocele this pressure is always reduced in proportion to the size of the abdominal loculus removed.

3. After separation of the sac from the peritoneum on the one side and from the abdominal parietes on the other, raw surfaces are left which result in adhesion of the parietal peritoneum in the region of the internal abdominal ring, and for a distance around this area proportional to the sac which was withdrawn.

After radical operation upon the enormous hernias which are quite common in the natives of the Teso district of Uganda, it is always a difficult problem to prevent the accumulation of blood in the bulky, lax, and pendulous scrotums which remain. For this reason, in those cases where an inguinal hernia and a large hydrocele coexist in the same patient, I never treat the two conditions at the same operation. Incidentally, I prefer to operate on the hernia first, because the distension of the scrotum by the hydrocele effectually prevents any accumulation of blood in this region. I therefore suggest that the treatment of bilocular hydrocele should consist of separation and removal of the whole of the abdominal and of the redundant scrotal portion of the tunica vaginalis, with suture of the remainder in eversion behind the cord, through a high scrotal incision, followed by drainage by means of a rubber tube for forty-eight hours. The patient should then be maintained in the recumbent position for three weeks in order to allow firm adhesions to develop and prevent hernia formation. No attempt should be made to operate on the hernia, which will probably disappear, but which, if persistent, will be more satisfactorily treated at a later date.

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Clinical Memoranda

Inversion of the Temperature in Acute Lobar Pneumonia

During the course of an investigation of over one hundred cases of acute lobar pneumonia at Smithdown Road Hospital, Liverpool, the temperature in one patient was found to assume an inverse type. The morning temperatures were higher than those of the previous evenings, and the symptoms were more severe during the day. The crisis also was diurnal. This is very unusual in acute febrile conditions, for in such, as a rule, the evening temperature is higher than that of the morning. Moreover, the symptoms are more severe during the night, at which time also the crisis occurs.

The case in question was that of a night watchman, aged 39. On November 3rd, 1933, he was seized with acute pain in the left chest, accompanied by cough and vomiting, and was admitted to hospital the following day. Clinical examination revealed some consolidation of the left lower lobe. The whole of the left lung eventually became consolidated. The following was his temperature chart.

Date	Morning	Evening
Nov. 4th, 1933	—	100.0°
,, 5th, ,, ...	101.0°	97.0°
,, 6th, ,, ...	101.2°	99.6°
,, 7th, ,, ...	100.0°	97.8°
,, 8th, ,, ...	102.8°	Sleeping
,, 9th, ,, ...	99.6°	99.0°
,, 10th, ,, ...	98.4°	97.0°

TWO OTHER CASES FROM THE LITERATURE

There appear to be only two similar cases on record. The first was that quoted by Dr. Downing in the *British Medical Journal* of July 1st, 1911. He stated:

"Possibly in night workers the temperature chart is upset in this way. It would be interesting to know if practitioners in attendance on men whose employment takes them on duty at night have observed a similar phenomenon."

In reply to this Dr. Hingston[1] quoted a case occurring in his practice, and added:

"That an 'inverse' occupation—namely, night work and day sleep—should produce an inverse type of temperature in disease is a feasible solution of the temperature phenomenon, since it is well known that in such people during health the temperature also tends to become inverse. So, also, since the crisis in pneumonia seems usually to occur at a time when the symptoms are most trying and the temperature is highest, it might, in night workers, be expected to occur during the morning hours when the fever has reached its maximum, rather than during the evening hours, when it is at a minimum. I cannot understand how night work could explain the unusual irregularity in both this and Dr. Downing's case. A chowkidar's (night watchman) occupation involves no great physical strain. It merely consists in staying awake at night to watch the sahib's bungalow and sleeping throughout the day—an occupation quite insufficient, I think, inversely to upset the temperature chart during not only health, but also disease."

Of the cases which came under my care during the past eighteen months, that reported here is the only one in which an inverse type of temperature occurred, and the patient was the only one in the series whose work was nocturnal.

MARY F. LACEY.

[1] *British Medical Journal*, November 4th, 1911.

Reviews

GYNAECOLOGICAL SURGERY

The appearance of a third edition of the *Textbook of Gynaecological Surgery*,[1] by Sir COMYNS BERKELEY and Mr. VICTOR BONNEY, is an event of considerable interest to British gynaecologists. The fifteen years that have elapsed since the last edition was published have witnessed many advances and changes, which abundantly warranted the bringing up to date of what has been, admittedly, the most authoritative book on gynaecological surgical technique in this country. It was perhaps inevitable that this edition should be larger than its predecessors, but, as the increase does not exceed forty pages, there need be no complaint on that score.

The authors in their preface state that the letterpress has been largely rewritten, and it has been reset in a stronger type, which is an improvement. Mr. Bonney has redrawn the pen-and-ink illustrations which have been such a feature of the work, and in doing so has made them more helpful by increasing their size and the boldness of their lines. Being drawn by a surgeon-artist, these figures are of peculiar accuracy and value, and most of them have the inestimable merit of not attempting to illustrate more than one point at a time. Of course, like all such illustrations, they make the operations appear almost ridiculously easy, but a little practical experience will correct any such misapprehension.

The whole range of gynaecological surgery is covered, and many alternative methods are described to suit particular conditions. In regard to hysterectomy, it is refreshing to find that, despite the advocacy by many recent writers of panhysterectomy as the operation of choice in removing the uterus for benign conditions such as fibroids, the vast experience of Sir Comyns Berkeley and Mr. Bonney still leaves them in no doubt as to the greater advantages and greater safety of the subtotal operation, except in the presence of definite indications for the more extensive procedure.

Among the changes we have noticed is a description of a new and ingenious operation for lengthening the urethra in cases of chronic carunculosis. Presacral sympathectomy finds a place for the first time, and is succinctly described. The chapter on abdominal myomectomy is enlarged to include a description of the transcavity operation for the removal of fibroids in the posterior wall, of Bonney's " hood " operation, and the block excision method. The technique of the same author's well-known method of amputation of the cervix is modified by the introduction of what he calls a " safety-bolt " suture. The section on Caesarean section is enriched by a description of the lower segment operation, with the use of Bonney's uterine compressor. The subject of prolapse is treated rather less dogmatically than in the previous editions—a point which may perhaps be reckoned among the improvements—and the operations for the varying conditions included under this generic term are very clearly described.

The list of changes and additions might be continued at length, and criticisms might be offered as to the inclusion of operations which are scarcely gynaecological (abdominovaginal excision of the rectum, for example), or the omission of the names of all but a very few of the originators of well-known operative methods. But enough has been written to indicate that the new edition offers a complete presentation of gynaecological surgery as it is practised in this country to-day, and criticism would be ungenerous in the face of the superlative excellence of the work as a whole and of the enormous labour involved in its production. It is a volume of which the authors and publishers may be justifiably proud ; it is a credit to British gynaecology, and it places their professional colleagues once more in the debt of its authors.

[1] *Textbook of Gynaecological Surgery*. By Sir Comyns Berkeley, M.C., M.D., F.R.C.P., F.R.C.S., F.C.O.G., and Victor Bonney, M.S., M.D., B.Sc., F.R.C.S. Third edition. London: Cassell and Company, Ltd. 1935. (Pp. 863 ; 535 figures, 17 coloured plates. 45s. net.)

EXPERIMENTAL BACTERIOLOGY

Experimentelle Bakteriologie of KOLLE and HETSCH must be known to many bacteriologists in this country. Even those whose knowledge of German is insufficient to enable them to tackle a textbook in that tongue are possibly acquainted with the French translation, for " Kolle and Hetsch " has been translated into many languages. It is somewhat surprising that an English translation has not been available, for, although we have some admirable textbooks of bacteriology of our own, this one approaches the subject from a rather different angle from most ; it is essentially a treatise on disease described from the bacteriological point of view. However, that want is now supplied, for an English translation of the seventh German edition, revised and edited by Professor JOHN EYRE, has lately been published,[2] so that English-speaking bacteriologists not possessed of facility in foreign languages will be able to consult this book and gain an insight into the German conceptions of bacteriology as applied to human medicine. In the main the translation has been carried out satisfactorily, though one comes across occasional mistakes. For instance, on page 64 it says, " Certain carriers of disease can be implanted . . . " when obviously " germs of disease " is meant, and on page 67 causative organisms are spoken of as " a mechanical momentum." Such mistakes, however, are few and far between, and even where they occur it is usually quite easy to understand what is meant.

For those who are unacquainted with this book a general outline of its make-up may be of service. It consists of two volumes, the first of which has 200 pages or so devoted to general matters, such as the nature of bacteria, their classification, biology, infection, immunity, and the like. The remainder of this volume and the whole of the second are given up to a consideration of the various infective processes affecting man, the nature and characters of their causal agents, their epidemiology, and immunological features. The general portion of volume i, although sound, contains nothing that calls for particular mention ; the treatment of the different subjects is essentially orthodox. Two alternative systems of classification are given, that of Flügge and the one proposed by the American Society of Bacteriologists, which is being adopted, in part or in whole, by an increasing number of bacteriologists. The chapter on infection in general is good, but the subject of immunity, to which a number of chapters are devoted, could well be given a more up-to-date flavour ; one might gather from its presentation here that not much advance had been made in our understanding of immunity since the time of Ehrlich. This general section of the book contains an admirable account of the bacteriophage.

It is not, however, the general section which constitutes the most valuable part of this treatise ; it is in the numerous chapters devoted to the different diseases that this resides. The plan followed in each case is the same, and it is an admirable one. First of all there is a brief

[2] *Experimental Bacteriology in its Applications to the Diagnosis, Epidemiology and Immunology of Infectious Diseases*. By Dr. W. Kolle and Dr. H. Hetsch. Translated from seventh German edition by Dagny Erikson. English version, incorporating further revision, edited by John Eyre, F.R.S., F.Z.S., M.D., M.S., D.P.H. Vols. i and ii. London: G. Allen and Unwin, Ltd. 1934. (Pp. 592 and 613 ; 200 figures, 118 plates. 30s. net each.)

historical survey, which is followed by a description of the aetiological agent of the disease and the means available for its isolation and identification. Then comes a brief outline of the clinical picture and a description of the post-mortem appearances. Following this the help that the laboratory can give in arriving at a diagnosis is discussed, and the chapter concludes with epidemiological and immunological considerations. Not only are the various micro-organismal diseases of man dealt with, but a number of purely animal infections are included as well, because of the valuable lessons that can be learned from their study. And throughout, as Professor Eyre points out in his preface, stress is laid on the importance of animal experimentation.

In preparing this English translation of Kolle and Hetsch the minimum of revision has been done and the spirit of the original has been well maintained. We cannot help feeling, though, that in one or two places a little more in the way of revision might not have been amiss. In the chapter on staphylococcal disease there is no mention of recent work on toxoid and antitoxic serum, and it does seem inadequate that infection in man due to *Br. abortus* should get no more than a few lines in the chapter on Malta fever. Then in the chapter devoted to encephalitis epidemica we come across a brief description of zoster inserted, as it were, as an afterthought. Why should it come here? Would it not have been better to devote a separate chapter to zoster and varicella? We wonder, too, how long authors of textbooks, when writing about virus diseases, will continue to state that the "causal agent is not yet known." Surely we know the aetiological agent of small-pox: at any rate, more is known about it than about the aetiological agent of leprosy, yet no one has any hesitation in stating that leprosy is caused by *Myc. leprae*. Again, there is a tendency to use the terms "inclusion body" and "elementary body" as though they were synonymous (p. 519), which is confusing, because they each mean something quite definite and different; it is like speaking of tubercles when one means tubercle bacilli. However, these are small defects in an otherwise admirable book. It is well printed, contains a profusion of excellent illustrations, many of which are in colour, and possesses an adequate index.

THE LIMITATION OF FERTILITY

The four surgeons who have combined to write *Sex Ethics*[3] are teachers of gynaecology and obstetrics in London, and the subject of their book is contraception, abortion, and sterilization. The three matters named are, in fact, not fundamentally medical problems. Each of them has its medical aspects, but even the most skilful of gynaecological surgeons may be without the equipment to discuss them in their much wider sociological, economic, and biological significance. This becomes plain in those chapters of the book by Messrs. ELLISON, GOODWIN, READ, and RIVETT which wander outside purely medical matters. Thus, for example, the authors appear to be unacquainted with the fertility or reproduction rates as demonstrated by Kuczynski, and to regard a crude birth rate and death rate as the main factors bearing upon future population. They advocate widespread compulsory sterilization, "framed in such a manner that no loophole for escape can be found." This is to be applied not only to all mentally defective or dull persons, even if segregated, but, among others, to all those suffering from tuberculosis and to all criminals except first offenders. Even in the case of first offenders parenthood is to be made penal until some unnamed tribunal pronounces them no longer liable to commit a second offence. The operation for sterilization is to be performed on "males suffering from haemophilia," though, presumably, no small proportion of such operations might prove fatal under present conditions. It would have been more within the authors' province to suggest sterilization of the normal sisters of such persons.

Nevertheless, in the middle of the book, where the four authors are dealing with the medical and surgical questions relating to abortion, they have some really useful things to say and information to impart. If the practical chapters of this portion of their book could be reissued as a brochure under some such title as "The Medical Aspects of Abortion," the authors would perform a valuable piece of work for their profession.

[3] *Sex Ethics: The Principles and Practice of Contraception, Abortion, and Sterilization.* By John Ellison, M.B., F.R.C.S.Ed., Aubrey Goodwin, M.D., F.R.C.S., Charles D. Read, M.B., F.R.C.S.Ed., and L. Carnac Rivett, M.Chir., F.R.C.S. London: Baillière, Tindall and Cox. 1934. (Pp. 282; 21 plates. 12s. 6d.)

ANATOMY OF SURGICAL APPROACHES

The little volume by Dr. L. C. KELLOGG on the *Anatomy of Surgical Approaches*[4] describes, as its name implies, the methods of reaching many of the structures with which the surgeon has to deal. In many cases Dr. Kellogg's account begins with investigations on the cadaver, described by a terminology unfamiliar in this country as "laboratory procedures." The method of reaching the more important arteries and nerves, the spaces in the hand and wrists which are liable to infection, and the structures of the fingers are all described in detail. Tracheotomy and operations on the vessels in the neck are then described, and the method of approach in the thorax and abdomen.

In every instance the descriptions are apt and clear and the diagrams are excellent. The volume should be of real value to the student who is endeavouring to put his anatomical knowledge to practical use, although perhaps it would be as well if, in some instances, the method of approach described were confined to the "laboratory."

LIVER FUNCTION TESTS

Ten years ago Professor FIESSINGER and Dr. WALTER brought out a useful book on the methods available for testing liver function. They have continued their work and observations on the same subject, and have now published a new book[5] which more than covers the same ground. Experimentally liver insufficiency may be simulated by observing the results of short-circuiting or removing the liver; great alteration occurs in the metabolism of the amino-acids, and animals so treated suffer at once from hypoglycaemia. Partial liver insufficiency is brought about by poisons which destroy the liver cells. The conditions so produced are varied, and may be analysed under the headings of the effect on the external functions of the liver, the production of bile salts and pigments, and the endocrine functions of the liver; its effect on the metabolism of carbohydrates, proteins, and fats; and its so-called detoxicating effect. Each of these functions can be explored separately, and the methods have been elevated to the position of tests of liver function. Some are easy to carry out and interpret, others give only equivocal results.

The two authors describe the methods of making these tests of liver function, and deal fairly with the possible fallacies. Their inclination is to depend on the methods which have already been established in clinical laboratories. The ordinary urinary examinations are made,

[4] *The Anatomy of Surgical Approaches.* By L. C. Kellogg, A.B., M.D. London: Baillière, Tindall and Cox. 1934. (Pp. x + 134; 29 figures. 7s.)

[5] *Nouveaux Procédés d'Exploration Fonctionnelle du Foie.* By Noel Fiessinger and Henry Walter. Paris: Masson et Cie. 1934. (Pp. 172. 28 fr.)

the blood tested by van den Bergh's methods, and the external biliary secretion observed by cholecystography after administration of dye. For testing internal function of the liver they favour the ability of the intact liver to hold up galactose, and this they regard as the most reliable test of all. Forty grains (1⅓ oz.) of galactose in 200 ml. (7 oz.) of water are given fasting, and the urine collected for the first two hours, then at the end of a further two hours, then after a further six hours, and at the end of twenty-four hours. In health not more than 1.2 grains should be eliminated in the first two hours, and 1.5 grains in the first four hours ; the remaining specimens should be clear. The more the elimination, the greater is the liver damage.

A good bibliography is supplied, but the book will have only a very special appeal.

Notes on Books

The first edition of Professor J. H. MUSSER'S *Internal Medicine : Its Theory and Practice*[6] was reviewed in these columns (1932, ii, 1195). Its second edition presents the rather unfamiliar feature of a reduction in both the number of pages and in the price. The work is on the same lines as before, but additions and changes necessitated by new work have been made ; thus new sections on the lymphatic vessels and on tuberculosis of the urinary tract have been included, and the account of diseases of the lungs has been largely rewritten. The editor, who writes on the deficiency diseases, has now taken in sprue in consequence of Castle's contention that it is a "conditioned deficiency," and that probably it and pernicious anaemia are different expressions of the same fundamental physiological process. A few selected references are usually appended to each section ; those on Cushing's syndrome or pituitary basophilia, however, occupy more space than the account of this recently described condition. The volume is succinctly written and well edited.

The Meteorological Observer's Handbook,[7] issued by the Meteorological Office, is essential for observers in the British Isles and Crown Colonies. It deals with recording of atmospheric pressure, temperature, rainfall, wind velocity, and sunshine. The new edition forms a complete guide to the care and manipulation of meteorological instruments and in the making of observations at ground level, both instrumental and non-instrumental. The book is divided into three parts. Part I contains instructions for making the observations which constitute the routine of a normal climatological station. Part II is devoted to autographic instruments, and Part III consists of tables. A collection of photographs of clouds is added as an appendix. The numerous illustrations have in most cases been specially prepared for this edition.

The third volume of the forty-fourth series of *International Clinics*[8] consists of four parts, devoted respectively to medicine, surgery, clinical pathology, and recent progress in paediatrics and oto-rhino-laryngology. Of the seven papers in the medical section attention may be drawn to those on the heart and athletics, by W. G. Leaman of Philadelphia, who maintains that the so-called "athletic heart" is a misnomer and that participation in athletics does not predispose to the early development of cardiac disease, and the differential diagnosis of congenital cardiac disease, by Maude E. Abbott of Montreal, who possesses an unrivalled knowledge of the conditions, as was shown by her exhibition at the Centenary Meeting of the British Medical Association in 1932. The surgical section contains, among others, papers on the problem of cancer of the stomach, by J. Shelton Horsley of Richmond, Va. ; functional uterine haemorrhage, by Leopold Goldstein of Philadelphia ; the pre-operative preparation and post-operative care of the patient with hyperthyroidism, by Donald Guthrie and Stanley D. Conklin of Sayre, Pa. ; and water balance in surgical conditions, by Frederick A. Coller and Walter G. Maddock of Ann Arbor. The section on clinical pathology consists of a paper by the editor and G. Lyman Duff of Baltimore on two instances of haematemesis. The paper on recent progress in paediatrics, by Lawson Wilkins, deals with active immunization against whooping-cough and passive and active immunization against measles, while Watt W. Eagle deals with oto-rhino-laryngological anaesthetics.

[6] *Internal Medicine : its Theory and Practice*. In contributions by American authors. Edited by J. H. Musser, M.D., F.A.C.P. Second edition, thoroughly revised. London: Henry Kimpton. 1935. (Pp. xix + 1288 ; 36 figures. 45s. net.)

[7] *The Meteorological Observer's Handbook*. 1934 edition. London: H.M. Stationery Office. 1934. (Pp. 152 ; 32 plates. 5s. net.)

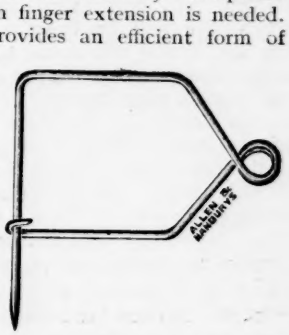
[8] *International Clinics*. Vol. iii, forty-fourth series. 1934. Edited by Louis Hamman, M.D. Philadelphia, Montreal, and London: J. B. Lippincott Company. 1935. (Four volumes, quarterly. 50s. net.)

Preparations and Appliances

INSTRUMENT FOR FINGER EXTENSION

Mr. R. C. BROCK, M.S., F.R.C.S., writes from Guy's Hospital:

There are many occasions when finger extension is needed. The instrument figured below provides an efficient form of extension, is very simple, quick to use, and cheap. It is made of stainless steel, and is really a modified safety-pin.



The point is thrust through the *pulp* from side to side, piercing it just distal to the tip of the terminal phalanx. It can be inserted with local anaesthesia only, if required. It is not necessary to pierce the nail to obtain finger traction ; extension via the pulp is painless, and provides all the pull that can ever be needed. I have left one in place for as long as three months without ill effects, either immediate or late. The pulp is in no way deformed. A length of thin rubber tubing passed through the loop gives an elastic and easily regulated pull. It is safer to cut off the projecting point when the pin is in position.

The instrument can be made to any size. I find that approximately 2 by 3 cm. is a convenient general size, which can easily be modified by simply stretching or compressing the angles. It is large enough to use on the big toe.

The instrument is made for me by Messrs. Allen and Hanburys Ltd., 47, Wigmore Street, London, W.1.

CALCIUM LAEVULATE

Burroughs Wellcome and Co., Snow Hill Buildings, E.C.1, have issued "hypoloid" calcium laevulate in ampoules of 1 gram. This product has been introduced to meet the demand for a calcium product for injection in cases where calcium therapy is indicated. It contains 14.8 per cent. of calcium, and is non-toxic in therapeutic doses. It is indicated in the treatment of tetany, in the vomiting of intestinal obstruction, in coeliac rickets, and as a pre-operative measure in various surgical operations.

ALKAGEN GRANULES

Alkagen granules (Allen and Hanburys Ltd.) are a granular preparation of magnesium hydroxide combined with glucose and oil of peppermint. The magnesium hydroxide acts as a gastric antacid, and has the advantage that it does not cause liberation of carbon dioxide gas. The oil of peppermint acts as a carminative. The granules have a pleasant taste, and can be taken either dry or suspended in water.

AN ORTHOPAEDIC TABLE

The Medical Supply Association Ltd., Gray's Inn Road, W.C.1, have issued a brochure describing their "Shropshire orthopaedic horse," which, it is claimed, enables the surgeon to work in comfort with the greatest possible accessibility to his patient. The design incorporates many ingenious features, including only a few modifications of the first model turned out by the firm. A special point is made of the care with which *x*-ray photographs can be taken during fracture manipulation, etc. Removable table-top, adaptability to different-sized patients and to the treatment of various parts of the skeletal system, longitudinal axial rotation, and independently moving supports and traction bars are some of the advantages of the apparatus, which costs £85 to £120.

TO MELBOURNE AND BACK

PART III.—ACROSS THE PACIFIC

On the afternoon of Wednesday, August 14th, the members of the British Medical Association world tour will stand on the decks of the Canadian-Australasian s.s. *Aorangi* and watch San Francisco and the American continent fade away astern. After six days of restful ocean voyage their next port of call is Honolulu, 2,400 nautical miles away. The *Aorangi* is well worth a study. She is a beautiful vessel of 18,000 registered tons, Clyde built, and driven by internal combustion engines. Her length is 600 feet, and among her appointments are a charming Louis XVI dining room, a Georgian lounge, an Elizabethan smoking room, and a most attractive veranda café. After the extraordinary variety of scenic experiences through which the travellers will have passed in their journey across America, the Pacific crossing to Honolulu will give some of them a pleasant opportunity to sit quietly and think or talk things over with old friends and new acquaintances. The entertainments committee will be busy with its programme of events, the day's run will come in for its usual share of attention, and during the lovely Pacific nights passengers can dance, play bridge, or just do nothing in particular except look out over an iridescent sea and feel that life is good. Once a week the captain holds lifeboat drill, and every available soul on board takes part. This, though only a precautionary measure, is a revelation of quiet efficiency.

HAWAIIAN ISLANDS

Early in the morning of Tuesday, August 20th, Diamond Head, the sentinel of the bright Hawaiian Islands, is sighted. A little later the fringe of foaming breakers gives place to wide beaches lined with swaying palms, these again yielding to a riot of brilliant foliage, among which nestle the roofs of Honolulu, and behind all are the mountains forming a perfect background. As the passengers go ashore smiling Hawaiian girls garland them with "leis" made from the choicest flowers, whose fragrance is so expressive of the island's gay profusion of oleander, bougainvillea, and hibiscus.

Hawaii, the "Paradise of the Pacific," is blessed with a scarcely varying temperature throughout the year. Surf bathing is as pleasant at midnight as in the afternoon, whether it is January or August. Only a day and a half are available for these lovely islands, and drives are arranged round the island of Oahu, via the gardens of Nuuanu Avenue up to the Pali (1,200 feet), from which there is a wonderful panorama of Hawaiian scenery. The route then drops down the valley to Kaneohe, with banana groves, taro and rice fields on all sides, and so along the coast to Haleiwa. A stop is made at the Mormon Temple of Laie, and the return journey is via Scholfield Barracks and the pineapple and sugar plantations. Some of the passengers will no doubt dine at the Moana Hotel round the famous Banyan Tree, with its dropping roots festooned with oriental lanterns, and dance to a Hawaiian band, the melodies of which are so in harmony with the soft night air of flower-scented Honolulu.

Next day there is the Aquarium to visit, where the hues of the brilliant-coloured fish are preserved by the natural quality of the surroundings. Some time must also be spent on Waikiki beach in surf riding, with the assistance, where required, of the world-famous Hawaiian experts. "Riding" the single board is a tricky business for the beginner, but surfing in an outrigger canoe, piloted by natives, can be enjoyed by anybody.

CROSSING THE LINE

The day and a half at Honolulu passes with disconcerting swiftness, and at noon on Wednesday the *Aorangi* once more stands out to sea, visitors casting their "leis" overboard as they pass the lighthouse in token that they will come again. During the next stretch of the Pacific crossing there are two odd happenings. The first of these is the appearance of Father Neptune and his initiation ceremony for those who have never "crossed the line." The other, a less obvious one, is the crossing of the International Date Line, when ship time changes from "Western Time" to "Australian Time," and a whole day drops out of life, so that midday on Tuesday suddenly becomes midday on Wednesday.

Deck sports will progress towards the "finals," and life aboard the *Aorangi* will continue on its pleasant way until on Friday morning, August 30th, the ship touches the port of Suva, capital of the Fiji Islands. The few hours ashore will be spent in a motor drive along the Cakabau Road to the Rewa River, the harbour with the purple hills rising to 4,000 feet in the background, and the picturesque little island of Nukahau. From the Waimanu Road the island of Bega can be seen, where live the fire-walkers, who still possess the secret of walking over hot stones without harm. Fiji is a territory where civilization has worked wonders, transforming the natives from cannibalism into a courteous and hospitable people in fifty years; their fine physique and soldierly carriage is to be admired. It is in Fiji that the strange "sensitive plant" grows; it has delicate fern-like foliage, and shrinks away and shrivels at the touch, to revive again slowly in due time. The crystal-clear waters of the lagoons of Fiji Harbour contain many bright-hued fish and coral formations of a fairy-like beauty.

In the late afternoon the *Aorangi* leaves for Auckland, which is reached on Sunday, September 1st. The stop in New Zealand is limited to two days. There will be drives round Queen Street, Karangahape Road, Grafton Bridge, Domain Drive, the Cenotaph, and the War Memorial Museum, and a visit to the district of Remuera, seeing the city's parks on the way, and so up the volcanic cones of Mount Eden and One Tree Hill, from where there is a really remarkable panoramic view of the countryside.

Sydney, with its wonderful harbour, is approached on Friday, September 6th, and here visitors will spend a day. This busy port, the shipping centre of the South Pacific, is set in a framework of natural beauties. Besides being a most progressive commercial city, Sydney is also a holiday resort, with bathing beaches and lovely drives such as those to the Blue Mountains, the charming Hawkesbury River, and the matchless coastal scenery of the Illewarra. The famous Harbour Bridge, with its 1,650-foot span, is emblematic of the spirit of the city.

On Saturday, September 7th, the last stage of the outward journey is begun, and after two days more the *Aorangi* arrives at Melbourne. Here members of the B.M.A. will take farewell of the ship that has given them so many memorable experiences in twenty-six days, and will be taken to their hotels for the real business of the tour—the Annual Meeting.

IMPORT DUTIES ON DRUGS

The Import Duties (Exemptions) (No. 4) Order, 1935 (S. R. and O., 1935, No. 131), issued by the Treasury on the recommendation of the Import Duties Advisory Committee, provides for the addition to the Free List, from March 1st, 1935, of the following raw materials mainly required in the manufacture of drugs and medicinal preparations: aloes; balsam of tolu; cassia pods and pulp; cochineal; damiana leaves; digitalis leaves and seeds, ergot of rye; ephedra stems and branches; gentian root; henbane (*Hyoscyamus muticus*) leaves, stems and roots; henna leaves; hydrastis rhizomes; ipomoea (orizaba jalap) root; jaborandi leaves; jalap root; leptandra root; liquorice root; lobelia; orris root; podophyllum and Indian podophyllum rhizomes; quillaia bark; saffron (*Crocus savitus*) stigmas and styles; sarsaparilla root; scammony root; senna leaves and pods; slippery elm bark; squills, stramonium leaves; tonquin beans; *uva-ursi* (bearberry) leaves; valerian root; witch hazel (hamamelis) bark and leaves.

The committee states that in a few cases there is some production, either in the United Kingdom or within the Empire, but foreign supplies are necessary to meet the demands of the United Kingdom manufacturers, and it is satisfied that the removal of the duty on these articles will assist the industry engaged in their preparation and the export trade of the drug manufacturers.

The Treasury Order is published by H.M. Stationery Office, together with the recommendation of the Advisory Committee (Cmd. No. 4818).

British Medical Journal

SATURDAY, MARCH 9th, 1935

RADIOLOGY OF GASTRIC DISEASE

It is interesting to read the reflections of a man of science who returns to review some of his own pioneer and classic work in the light of the successes achieved by those who have followed up and amplified his researches. Professor W. B. Cannon, while still a medical student, initiated and brilliantly carried out investigations of the movements of the alimentary canal by means of *x* rays and a fluorescent screen. Since 1897 many *x*-ray workers have contributed the results of their observations, and now, after nearly forty years, Professor Cannon surveys it all in the fifteenth Caldwell Lecture before the annual meeting of the American Roentgen Ray Society.[1] Since his last review in 1913 he himself has been occupied with other subjects, but he welcomed the opportunity to look back through three decades to his primary efforts and their fruits, and to survey them with a fairly critical detachment. Certain features only in the vast field could be touched on in one lecture. They are, however, those of perpetual interest, since upon them is based the whole superstructure of the *x*-ray diagnosis of diseases of the digestive tract. The course of gastric peristalsis ; the rate of passage of different foodstuffs—and consequently of different opaque meals—from the stomach ; the control of the pyloric sphincter ; the elusive question of " tonus " of the alimentary canal ; and the influence of the general bodily conditions on the digestive process are the fundamental problems underlying the correct diagnosis of diseases of the digestive tract.

That *x* rays formed the most important of the special means of diagnosis of diseases of the stomach was stated by all speakers at a recent meeting of the Section of Medicine at the Royal Society of Medicine.[2] It is interesting to study the trend of that discussion in the light of Professor Cannon's summary of the facts and of the lacunae in our knowledge of the physiology of the stomach. The position of the stomach high in the left hypochondrium makes difficult its examination by ordinary methods, though palpation may define a tumour or demonstrate a superficial muscular resistance due to underlying inflammation. But there may be serious organic disease of the stomach without significant symptoms or signs. Nevertheless, a diagnosis can often be made by a careful analysis of the symptoms without the support of demonstrable signs. For the diagnosis of organic disease the interruption of peristalsis observed on the fluorescent screen is the best indication, and may be accompanied in ulcer by an alteration of outline or niche, or in gastric carcinoma by a filling defect. Further observations are needed on whether there are types of peristalsis peculiar to lesions in one part or other of the organ, and whether there are characteristic behaviour patterns of the stomach associated with the ingestion of different substances.

It is now many years since *x*-ray evidence confirmed Pavlov's work on the differences in the passage of various foodstuffs from the stomach. The rapid discharge of carbohydrate food and the slow discharge of fat, disclosed by the method of incorporating bismuth in amounts of these foods of uniform consistency, was confirmed, and the intermediate rate of discharge of protein was found. These facts are of much importance in the refinements of radiological technique by which the folds of mucous membrane of the filling and emptying stomach are defined, the results of which have led to differentiation of hypertrophic and atrophic gastritis on *x*-ray evidence. That these variations in folds can be shown also by the newer technique of gastroscopy, which was demonstrated in the cinematographic films of Dr. Arafa, lends weight to the recently revived ideas on the prevalence of gastritis. Further confirmation was brought forward by Dr. Simpson in the slides of gastric mucosa obtained before autolytic and degenerative changes had occurred. But Professor Cannon would point out the great variations in the tone of the stomach wall encountered under varying but still physiological conditions. In a state of heightened tonus the mucous membrane must be folded to fit in ; that the folds are in regular patterns is interesting. But a satisfaction of appetite, an agreeableness of the ingested food, are necessary for a proper starting of the digestive process, in relation not only to the secretion of the several glands but also to the muscular functions of the alimentary canal. Fluid which has no appetizing qualities—a barium " meal," for example—will no doubt yield pictures of peristalsis ; but we may well question whether it should be used for judging what would happen in all cases, as when, for instance, really delicious food is taken instead, food that would make the mouth water. For there is a psychic tonus, apparently, just as there is a psychic or appetite juice, dependent upon the vagal innervation. And all sorts of stimuli, in the body or from without, may have an influence on the vagal and sympathetic final common paths. Gastric lesions may follow mid-brain damage or disease. Much more often, in the ordinary daily routine, stimuli arise from gall-bladder and appendix in the abdomen ; from extra-abdominal diseases such as phthisis and anaemia ; from worry or injudicious habits of living that influence the digestion in the stomach, giving rise to types of perverted function. As Dr. Maurice Shaw pointed out, these " functional " disorders of the stomach include faults of posture (tone) or defects of secretion. As an acute state of emotional perturbation will produce these conditions, so will pain, and, it may be, even external cold, asphyxia, haemorrhage, or low blood pressure, the last two of which may be regarded as involving tissue asphyxia. In the presence of constant adverse conditions a chronic state is set up, and it behoves the physician to search out

[1] *Amer. Journ. Roentgen. and Rad. Ther.*, November, 1934 xxxii, 675.

[2] *British Medical Journal*, 1935, i, 219.

and deal with the cause, sometimes with the aid of a psychologist.

Professor Cannon has indicated where further research on the problems of the digestive process may prove fruitful. As Dr. Izod Bennett said in concluding an admirable summary of the present-day knowledge of the diseases of the stomach and their diagnosis, it may be that in a few years the whole chapter of gastric disease may have to be rewritten from a new angle.

TREATMENT OF EARLY SYPHILIS

In a series of three articles recently published[1] Professor John H. Stokes, with seven collaborators, sets out to assess the effect of treatment in early syphilis. In the first of these an analysis is made of 1,360 cases treated and observed for a total period of two years. (It should be noted that many of these were under treatment during the whole period.) From this it appears that: (1) the maximum frequency of relapse is 10.1 per cent., more than half of which is "muco-cutaneous"; (2) the patient who begins his treatment in the sero-positive primary stage is the most likely to relapse; (3) relapse decreases in frequency as the number of arsenobenzol injections increases; and (4) in general a "continuous" form of treatment yields better results than "intermittent," "irregular," or "intensive." (These terms are defined in a footnote.) Patients with florid secondary syphilis do better in the long run than those with late primary lesions, because in the former the tissues have had time fully to elaborate the antibodies, whereas in the latter the patient tends to fall between two stools: the infecting organism has become "entrenched" in the tissues, while antibody production has not yet reached its maximum.

The second article deals with "optimum treatment." This works out at ten to nineteen injections of arsenobenzol ("606") for sero-negative primary syphilis, twenty-five to thirty-five for sero-positive primary, and twenty to twenty-nine for early secondary, with heavy metal in addition in all cases. As a rule, better results were obtained with high than with low doses, and the authors prove conclusively that arsenobenzol as such does not predispose to neurosyphilis: "irregular" treatment was found to be the principal factor in causing an abnormal spinal fluid. Where a patient does not show a satisfactory result at the end of two years he should be treated not with heavy metal alone but with ten or more further injections of arsenobenzol. Where the treatment has been adequate during the first two years 96 per cent. of "cures" may be expected, while this drops to 73 per cent. when the treatment has been inadequate. The opinion is expressed that when the course of the disease has been clinically and serologically uneventful, a patient may be placed "on parole" after two years of adequate treatment. The third article is devoted to an analysis of the relative value of treatment and no treatment, taking on the one hand 907 cases of treated early syphilis, and, on the other, Bruusgaard's series of 145 untreated cases at the Oslo Hospital observed from three to ten and from ten to twenty years. From this it is abundantly clear that treated cases on the whole do very much better than untreated ones—even where the treatment is irregular and inadequate. For example, clinical neurosyphilis is about three times as common in untreated as in treated cases: treatment renders about 70 per cent. of patients symptom-free, as against 30 per cent. of untreated cases over a three- to twenty-year period. A point of interest is that Bruusgaard's series showed less cardiovascular syphilis than the treated series in the ten- to twenty-year period —namely, 1.5 per cent. against 5.8 per cent.—while in the twenty- to thirty- and thirty- to forty-year periods (for which there were no comparable figures in the treated group) cardiovascular syphilis was found in 10 per cent. and 12.5 per cent. respectively of the untreated cases.

From these three articles it is possible to estimate the prognosis in treated early syphilis, whether the treatment be optimal, irregular, or inadequate. The authors favour the "continuous" method (that is, arsenobenzol and heavy metal without rest periods). What clinicians would like to know is the form and the amount of treatment that gives the best results in early syphilis. An authoritative pronouncement on this point would be invaluable; perhaps the report of the recent Zurich conference will provide the answer.

[1] *Amer. Journ. Med. Sci.*, 1934, clxxxviii, 660, 669, 678.

CHIEF MEDICAL OFFICER, MINISTRY OF HEALTH AND BOARD OF EDUCATION

The following communiqué was issued to the Press on February 27th: "The Minister of Health and the President of the Board of Education announce, with great regret, that Sir George Newman is due to retire from the public service at the end of the current financial year, March 31st next. Sir George Newman has been the Chief Medical Officer of the Board of Education since 1907, and of the Ministry of Health since 1919. The Minister and the President have appointed Dr. Arthur Salusbury MacNalty, a senior medical officer of the Ministry and deputy to the Chief Medical Officer, to the joint post thus vacated. Dr. Thomas Carnwath has been appointed deputy to the Chief Medical Officer in succession to Dr. MacNalty." The widespread regret that is felt at the approaching end of Sir George Newman's very distinguished public career will, we know, be tempered by satisfaction in the choice of Dr. Salusbury MacNalty as his successor, and of Dr. Carnwath as deputy to Dr. MacNalty, for both have behind them a long record of admirable work in the central business of the Ministry and in other spheres of scientific research and public health administration. It is also a source of gratification that the Chief Medical Officership in the Ministry of Health and the Chief Medical Officership in the Board of Education, which have long been united with such happy results in the person of Sir George Newman, are not to be parted. We hope that Dr. MacNalty, as the holder of these joint posts, will enjoy, like his predecessor, the right of direct access to the Ministers, so that the professional voice, whenever necessary, may have an independent hearing.

SELECT COMMITTEE ON THE OSTEOPATHS BILL

As will be seen from the report elsewhere in this issue (p. 488) the Select Committee of the House of Lords began its work on the Osteopaths Bill on Monday last, when the case of the four osteopathic bodies supporting the Bill was opened. When the hearing began the osteopaths announced certain amendments which they wished inserted, and these so changed the character of the Bill in certain particulars that counsel for the British Medical Association and for various other bodies asked permission (which was granted) to defer their cross-examination of the one witness who gave evidence. Twelve applicants are to be heard against the Bill. The British Medical Association proposes to put in the chair Dr. James Mennell, Sir Henry Brackenbury, and a representative of the American Medical Association or an American lawyer. Sir Farquhar Buzzard is applying on behalf of several universities and medical schools, and will himself with four other representatives of the schools tender evidence. The General Medical Council is to offer evidence through its president, Sir Norman Walker. The Royal College of Physicians of London and the Royal College of Surgeons of England are uniting their evidence, and propose to tender as witnesses two physicians and two surgeons. Other applicants to be heard against the Bill include the Scottish universities, the Royal Colleges of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow, the Society of Apothecaries of London, and the Chartered Society of Massage and Medical Gymnastics. The British Chiropractors Association and the Nature Cure Association are also giving evidence against the Bill. Another body appearing in opposition is the London Association of Certified Accountants. It is understood that Sir Arthur Robinson and Mr. S. P. Vivian are tendering evidence on behalf of the Ministry of Health. The Select Committee is proposing to sit on Mondays and Fridays, and judging from the array of counsel who appeared at the first sitting, and the crowd of witnesses, including the threatened presence of some of the osteopaths' grateful patients, it seems as if the proceedings are likely to be very protracted.

A DOCTOR ON OSTEOPATHY

Now that a Select Committee of the House of Lords is hearing evidence on osteopathy, the account published in this week's *Supplement* (p. 90) of an address on this subject by Dr. N. J. Macdonald is of particular interest. Dr. Macdonald is a qualified medical man who has practised osteopathy for twelve and a half years. Honestly persuaded of the benefits of osteopathic treatment and of the soundness of osteopathic theory, he has put his case before the South Suffolk Division. The osteopath, says Dr Macdonald, has based his beliefs on the theory that human resistance depends on the involuntary nervous system, and for that reason he has concentrated his attention on the spinal column. In maladjustments he sees the *fons et origo* of disease, and the restoration of the mechanical perfection of the axial skeleton should, he maintains, be the primary therapeutic aim of the healer. The osteopathic lesion, according to Dr. Macdonald, is joint strain in which the normal range of movement of a joint is restricted as a result of trauma or of a condition similar to or identical with fibrositis in the tissues around the vertebrae. In close relation to the vertebrae are the ganglia and axons of the sympathetic nervous system. "Fibrositis" leads to a limitation of movement between adjacent vertebrae; in the "fibrositic" area, also, sympathetic nerve fibres are involved. The effects of this lesion are as widespread as the distribution of the nerve fibres of the sympathetic system. The osteopath corrects the lesion by restoring the full range of movement to vertebral joints whose mobility is restricted. This, very briefly, summarizes Dr. Macdonald's exposition of theory. However much one may disbelieve in the soundness of the osteopathic theory of disease, one is impressed by the modesty of the therapeutic claims here put forward, and perhaps not a little astonished at certain contradictory statements. Dr. Macdonald, for example, says that in this country the osteopath's practice is confined almost entirely to trauma and to *chronic conditions*. He then goes on to state that, when pathology has advanced to an alteration or destruction of tissue, restoration of full function is hardly to be hoped for . . . that when toxaemias have progressed sufficiently to produce arthritis the expected recovery varies with the "progress of the pathology." It was hardly necessary to inform a medical audience of such a self-evident fact; nor, we imagine, would Dr. Macdonald deny that one of the distinguishing features of chronic conditions is "alteration or destruction of tissue." As an example of a disease in which benefit from manipulative treatment can be obtained he instances anterior poliomyelitis; but, he says, "it will benefit just so far as there has not been complete destruction of the anterior horn cell." In other words, Dr. Macdonald recognizes those limitations to effective treatment which have been taught to generations of medical students, including, no doubt, himself. Osteopathy, in fact, would seem to achieve that limited degree of success that attends most therapeutic measures directed against diseases in which permanent change has been brought about in the tissues. This is surely no news but the old news. Dr. Macdonald does, however, record improvement after manipulative treatment of "general debility, excessive fatigue, sleeplessness, post-operative backache, and vague aches and pains, possibly associated with minor metabolic disorders." But is this not the field in which the physician with the persuasive manner and a bottle of gent. cum rheo establishes his reputation as a healer? Does not one hear as a faint echo the out-patient who declares, "Ah, but Dr. So-and-so's red medicine always does me good"? We do not wish in the least to impugn Dr. Macdonald's good faith; rather would we commend his therapeutic caution as witness of a sound medical training. And all he asks for is that "somewhere in the already crowded curriculum osteopathic diagnosis and treatment should be interpolated." This is very different from the demand for separate registration and educational standards. Dr. Macdonald proves up to the hilt, though perhaps unwittingly, the necessity of a thorough medical training in the accepted centres of medical education in this country for those who wish to practise the specialty or cult known as osteopathy.

TREATMENT OF THE MYOPATHIES AND MYASTHENIA GRAVIS

Increased interest in the myopathies and in myasthenia gravis has been aroused by the claim that patients suffering from these disorders may benefit from the administration of glycine, but recent publications show that there is still much to be learned concerning their essential nature. Reese, Burns, and Rice[1] attempt to explain the role of glycine in muscular contraction. It is believed that during muscular contraction phosphagen, or phosphocreatine (a labile compound of creatine and an organic or an inorganic phosphate), is broken down into its two main components and that the necessary energy is derived from this reaction. After contraction phosphagen is resynthesized in the presence of oxygen and lactic acid. It appears that the creatine is formed either from or by amino-acids, and there is evidence that the formation of creatine depends in part at least on the storage of glycine. Normal males retain small amounts of ingested creatine, but in women and children some of the ingested creatine is excreted in the urine. Patients suffering from the myopathies excrete almost the whole of the ingested creatine, and it is suggested that in such patients glycine is either not utilized or is not stored in the dystrophic muscles. A number of workers have found that if glycine is given in doses of 5 to 20 grams daily to patients suffering from myopathy there is an unusual rise in the creatinuria, which is followed by a fall in the excretion of creatine and a rise in that of creatinine. This is believed to indicate a return in the muscular metabolism of creatine towards normal. Tripoli, McCord, and Beard[2] have studied the creatine-creatinine metabolism in patients suffering from muscular dystrophy. They observed that patients in whom the average creatine excretion rose from 50 to 200 per cent. above that of the control period, provided this increased creatinuria soon disappeared, showed both subjective and objective improvement. On the other hand, when the muscular atrophy was due to disease of the nervous system—as, for example, in amyotrophic lateral sclerosis—a similar increase and decrease of creatinuria was associated with only subjective improvement or merely an arrest of the symptoms. Whether glycine leads to improvement in the manner suggested above must be regarded as still unproved. Nevin[3] has recently published the results of an investigation of muscular chemistry in certain abnormal conditions. He states that if in the muscular dystrophies there is a primary failure of the muscle to build up creatine-phosphoric acid, the diminution of this compound in the muscles would be expected to be much greater than was actually found. In two cases of pseudo-hypertrophic muscular dystrophy the usual chemical changes in the phosphorus-holding compounds took place during contraction, although to a lesser degree, and the creatine-phosphoric acid which was broken down was built up again during recovery to nearly its original value. Boothby[4] considers that glycine leads to much greater improvement in myasthenia gravis than in myopathy. In the former disease he recommends[5] an average daily dose of 30 grams, which may be combined with ephedrine sulphate in doses of 1/8 grain three to five times daily. He reports the results of this method of treatment in forty-seven cases observed over a period of twenty-six months. Thirteen patients are working, practically at full time ; nine are greatly benefited and are doing light work ; seventeen are moderately improved ; one has been lost sight of ; and seven have died. The value of any method of treatment in myasthenia gravis is extremely difficult to assess, since, as is well known, spontaneous remissions leading to apparently complete recovery are not uncommon and may last for several years. If glycine is indeed of therapeutic value in myasthenia gravis its *modus operandi* is more obscure than in the myopathies. Nevin investigated the muscle chemistry in one case of myasthenia gravis and found that there was no evidence of any abnormality in the intrinsic chemical mechanism of the muscle. He concludes that the chemical processes which accompany activity and recovery in the myasthenic muscle differ in no significant way from those which are characteristic of healthy muscle. He makes the interesting suggestion that future studies of the aetiology of this disease should be directed to the investigation of the transmission of excitation at the neuro-muscular junction, for it is at this point that ephedrine, which is frequently beneficial, is most likely to act. This idea was acted upon in 1934 by Dr. Mary Walker,[6] who gave a patient with myasthenia gravis physostigmine to see whether it would " counteract the effect of the unknown substance which might be exerting a curare-like effect on the myoneural junctions." Later, at the Royal Society of Medicine, Dr. Walker demonstrated the striking improvement obtained in a severe case of myasthenia after an injection of prostigmin (an analogue of eserine). Dr. Blake Pritchard has recently[7] made a report of the results obtained in seven patients with myasthenia gravis who have been treated with injections of prostigmin and atropine, and in the present issue of the *Journal* (p. 463) Dr. L. P. E. Laurent, who has been working concurrently on this subject, records another seven cases. The dramatic improvement obtained by this form of therapy is unfortunately only temporary, the effect passing off completely in eight hours. It is thought that prostigmin delays the destruction of acetylcholine at the motor nerve endings. The importance of this work, therefore, seems to reside in the light it throws upon the aetiology of myasthenia gravis, and further work may be expected to disclose the nature of the metabolic disorder which puts out of gear the chemical transmission of nervous impulses at the myoneural junction.

[1] *Arch. Neurol. and Psychiat.*, 1935, xxxiii, 19.
[2] *Journ. Amer. Med. Assoc.*, 1934, ciii, 1595.
[3] *Brain*, 1934, lvii, 239.
[4] *Proc. Mayo Clinic*, 1934, ix, 600.
[5] Ibid., p. 593.
[6] *Lancet*, 1934, i, 1200.
[7] Ibid., 1935, i, 432.

PHARMACEUTICAL RESEARCH

Since 1926 the pharmacological laboratories maintained by the Pharmaceutical Society have published annual reports of their research work. This year the laboratories of the College of the Pharmaceutical Society have combined to produce a report which gives an account of the research work done in all five departments. The department of chemistry has studied methods of standardization and assay of drugs and has also made excursions into the difficult problem of relat-

ing chemical constitution and pharmacological action. The department of nutrition has continued its studies of the vitamin content of drugs and food material. The report gives interesting figures regarding the vitamin content of samples of cod-liver oil submitted for analysis. The vitamin D content of 197 samples gave an average of 157 international units per gram, whilst twenty-seven samples gave an average vitamin A content of 2,270 international units per gram. Figures are given for twenty-four samples in which the content of both vitamins was assayed, and it is of interest to note that in this relatively small sample the vitamin D content ranged from 50 to 360 units per gram and the vitamin A content from 500 to 8,400 units per gram. There was, moreover, no evidence that a high vitamin A potency was accompanied by a high vitamin D potency. These findings point to the need for standardizing cod-liver oil in respect of its vitamin content. The department of pharmacognosy reports on work done to improve the identification of crude drugs and powders. The department of pharmacology reports work carried out on the standardization of various hormones. Investigations on the sympathetic vaso-dilator nerves have proved that in the dog the sympathetic supply to the arterioles contains cholinergic as well as adrenergic fibres. Research work in the department of pharmacy has been interrupted by the reorganization that has been carried out during the past year. This report for 1934 shows clearly that the College of the Pharmaceutical Society is actively conducting research which ranges over a wide variety of subjects, but which is directed to the general object of providing accurate means for measuring the potency and the nature of the action of the drugs used by the medical profession. Rational therapy is impossible if drugs of uniform activity are not available, and hence the work of this College is of fundamental importance to medical science.

NEUROHISTOGRAPHY

The visualization of blood vessels by the injection of opaque substances was achieved some years ago, and Professor M. Saito[1] now announces that he has successfully visualized peripheral nerves by injecting lipiodol or thorotrast. He has been able to see nerve fibres, plexuses, and epidural spaces: he injects 0.5 to 1 c.cm. slowly into the nerve, and neurographs are taken twenty-four hours, two days, and three days later. As time passes the injection flows centripetally, and points distant from the injected area can be seen. Other Japanese workers (Kamikawa and Tashiro and Nakashima), Professor Saito says, have succeeded in visualizing lymph vessels and glands by injecting thorotrast into the abdominal cavity or knee-joint. No local disturbance is caused in the human subject. Professor Saito reports a number of cases in which the method has been employed successfully, and concludes that thorium dioxide makes the nerve visible farther than lipiodol. His illustrations show the ulnar nerve as a belt about 3 mm. wide at the elbow-joint. The parallel fibrous bundles are seen, and form a dark linear shadow at the margin. The internal leaf of the neurilemma consists of fibres running parallel with the nerve, while the fibres of the outer leaf run obliquely to it. The shadow caused by injection into the perineurium seems to be absorbed as time goes on, but that in the nerve itself appears to be unabsorbable ; it is probably disposed of by gradual oxidation of the oil. Despite this long retention in the nerve there is no pain or paralysis. The clinical applications of this method are obvious. By its means the surgeon can ascertain precisely the relations of the nerves to scar tissue, the position of nerve tumours, and any displacement of, or interference with, the course of the nerve fibres. Luxation produces no change in the shadow, but any adhesion causing paralysis prevents the opaque substance from flowing normally towards the centre. Adhesions also show some irregularities. The normal and regular picture of the nerve fibre will be disturbed in cases of traumatic neuritis, the pathological changes producing a " knotty " defect. The perineurium gives much additional and valuable information for diagnosis. Neurinomas can be clearly visualized as irregular shadows outlining their shape. The opaque substance tends to collect at the poles of the swellings, forming a triangle from which it infiltrates towards the centre in the course of time. The path of the nerve fibre through the neuroma can, however, be clearly seen in most cases running through the growth.

[1] *Amer. Journ. Surg.*, 1934, xxvi, 300.

WHAT IS A SECRET REMEDY?

The medical profession long ago recognized the principle that a doctor should not prescribe a remedy of which he did not know the nature and composition. This principle is of fundamental importance, because it is impossible for therapeutics to be established on a rational basis if the nature of the substances used is secret. Among other reasons there is the simple point that unless the composition of a remedy is published there is no guarantee that this will remain constant. A century ago there could be little doubt as to whether the composition of a particular remedy was secret or not, but the advances of modern chemistry have raised curious problems. The chemical name of a new synthetic remedy often occupies one or two lines of print, and hence abbreviated titles are necessary. The new drug is usually introduced under a title which is registered as a trade mark, and, if successful, in due course it acquires a pharmacopoeial name and often a dozen or more other proprietary titles as well. These trade names cannot be regarded as disclosing the composition unless they are supplemented by a description of the compound in recognized chemical terminology. The complexity of modern organic chemistry has, however, provided an odd loophole in this respect. It is easy to frame chemical descriptions of well-known drugs in such a form as to be unrecognizable except by an organic chemist. One amusing example of this was the description of glycerol as trihydroxy butane, a correct but very unusual form. A recent effort in nomenclature is even more elaborate, for three well-known pharmacopoeial drugs—phenolphthalein, ephedrine hydrochloride, and amidopyrine—appear under the titles of dihydroxybenzophenonephthalide, ethylmethylaminohydroxytoluene hydrochloride, and dimethylaminophenyldimethylisopyrazolone. Such usage of correct but unusual designations must of course be distinguished from terminology which is merely a flight of

unskilled chemical fancy. An example of the latter class was a preparation widely advertised under the description trimethenal allylic carbide. This term was criticized in the Press as being meaningless and not a chemical definition. Such examples are of interest as showing the various gradations that exist between the presence and absence of secrecy regarding the composition of a proprietary article. So far as the medical profession is concerned its duty is clear—namely, to use only those preparations the nature of which the proprietor makes no attempt to conceal.

LOW-VOLTAGE X-RAY THERAPY IN CANCER

The possibilities of low-voltage *x*-ray therapy in cancer were briefly mentioned in an account published last week (*Journal*, March 2nd, p. 440) of a recent meeting at the Medical Society of London. The idea comes from Germany, where concentrated efforts have been made during the past few years to evolve an apparatus which could be used as a substitute for radium in the treatment of superficial and easily accessible malignant growths. The available supply of radium in that country has been estimated at 10 grams, which, in view of its large population, compares unfavourably with the 90-odd grams in England: this possibly acted as a stimulus to German research, which culminated in the production by the Siemens-Reiniger-Werke A.G. of Rudolstadt of a low-voltage tube, with which Professor H. Chaoul has developed a special technique at the Charité Hospital in Berlin. Professor Chaoul has already published three papers on his results with the method,[1] and we understand that these have attracted sufficient attention over here for two of the machines to be ordered—one for the Cancer Hospital, London, and another for the General Hospital, Birmingham. In both instances the apparatus is the gift of Sir Herbert Austin. Briefly, the aim has been to obtain an *x*-ray tube which is used at a focal distance of 5 cm., and which will give a distribution of radiation comparable to that of radium. The apparatus consists of a hot-cathode tube working at 60 kV, and having at its extremity a window of copper sheeting 0.3 mm. in thickness, through which the *x* rays pass. To this are fitted detachable applicators 5 cm. in length, and of different shapes and sizes, by means of which the irradiation can be brought into contact with the growth. Applicators are designed for superficial, intra-oral, and intravaginal use. The tube is shock-proof, earthed, and water-cooled. The type of condition treated by Professor Chaoul with this technique includes cancer of the tongue, lip, cheek, anus—and, by means of a special technique, cancer of the cervix uteri. After-results have shown disappearance of the tumour and replacement by fibrous tissue. One of the chief advantages of the treatment is the comparatively short application that is required (the rate of irradiation is in the region or 150 r per minute), the absence of deep penetration (90 per cent. of the rays are absorbed at a skin depth of 5 cm.), and the ease with which the tube can be applied. Mr. Cecil Joll and Professor J. M. W. Morison, who recently visited Berlin to see Professor Chaoul at work, state that it is early yet to envisage the possibilities of this form of therapy, for the treatment is still in its infancy, but that it seems reasonable to express two hopes: (1) that investigation may show results as satisfactory as those at present obtained with radium in the superficial growths; and (2) that by new methods of "surgical access"—and this has already been obtained in Berlin in a case of carcinoma of the rectum—the treatment may be applied to regions of the body where at the present time the use of radium in the form of a bomb or needles has proved disappointing.

[1] *Strahlentherapie*, 1933, xlviii, 31; ibid., 1934, l, 446; *Münch. med. Woch.*, 1934, lxxxi, 235.

On March 4th Sir Holburt Waring, Bt., President of the Royal College of Surgeons of England, declared open the new building of the Royal Australasian College of Surgeons in Collins Street, Melbourne, and read a message from the King sending good wishes for the welfare and prosperity of the College.

The constitution and terms of reference of the committee of inquiry into coroners' inquests will be found in our Parliamentary Notes. The committee includes Sir Farquhar Buzzard and Mr. Digby Cotes-Preedy, K.C., who was a member of the medical profession before being called to the Bar.

REDUCTION OF OUT-PATIENT WAITING

MEMORANDUM BY KING'S FUND

A further step towards the reduction of waiting in out-patient departments has been taken by the Out-patient Arrangements Committee of King Edward's Hospital Fund for London, by the issue of a memorandum on *Time-saving Methods at Hospital Out-patient Dispensaries*.[1] Its object is to assist all hospitals to ascertain whether their own waiting time is capable of reduction, and, if so, how to reduce it.

The Out-patient Arrangements Committee, with Sir John Rose Bradford as chairman, was appointed by the Prince of Wales as a result of the report of a special committee of inquiry into out-patient methods.[2] That report gave a brief outline of time-saving suggestions at every stage of out-patient procedure, and recommended that the King's Fund should follow this up in more detail. The committee was assisted in its present inquiries by one of the investigators of the National Institute of Industrial Psychology, to whom it is indebted for a great deal of information, particularly about the arrangements and procedure inside the dispensaries, and for many of the suggestions mentioned in the memorandum.

The committee's general conclusions are: that at many hospitals the time spent at the dispensary by most patients is quite short; that where there is waiting it is usually because the premises are too small or because there are excessive peak load pressures at rush hours; and that decreases in waiting, sometimes small in amount but cumulative in their effect on the patients who come last, have often been produced by changes in the details of the dispensary arrangements—for example, in methods of prescribing or of dealing with complicated prescriptions, in internal organization of the dispensary, in design of the hatch at which patients receive their medicines, or in the arrangements for the patients while waiting their turn.

The memorandum discusses a number of methods which have been adopted or suggested for reducing delay due to these various causes. Final conclusions on these methods are deferred until the hospitals have had the opportunity of commenting on them or of making additional suggestions. In the meantime, the information contained in the memorandum will assist any hospital to take immediate action if it considers action to be desirable.

[1] Printed and published for King Edward's Hospital Fund for London by George Barber and Son, Ltd., Furnival Street, London, E.C.4. (1½d. net., post free.)

[2] See *British Medical Journal*, January 7th, 1933, p. 32.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice

TREATMENT OF SCARLET FEVER

BY

ALEX. JOE, M.D., D.P.H.

The first essential in the treatment of scarlet fever is adequate isolation of the patient in a room which should be well ventilated, have a sunny aspect, be provided with an open fire in which swabs can be burnt, and be in close proximity to a water-closet. The patient should have for his sole use, and marked if necessary, crockery and cutlery, tooth-brush and hair-brush, soap, towels, thermometer, and a supply of old books and toys which can afterwards be burnt. In the room should be placed two overalls hanging just inside the door, and a wash-hand basin with soap and nail-brush. The nurse or attendant must always put on the overall when entering the room, and before leaving take it off and scrub up the hands. The same applies to the medical man looking after the case, for with these precautions there need be no fear of the carriage of scarlet fever or other streptococcal infection from the patient to others.

A sheet wrung out in carbolic, 1 in 80, does nothing to prevent the spread of infection, but it is a useful warning to others to keep out. Articles used for the treatment or nursing of the patient should be sterilized at once—for example, after food or medicine crockery should be boiled. Swabs, of which a plentiful supply should be provided in the shape of cotton or linen rags, or paper handkerchiefs, should be burnt at once on the fire. After excreta have been deposited in the water-closet, bedpans should be wiped out with 1 in 20 carbolic. Body and bed linen can safely be dealt with in the domestic wash-tub. Some difficulties have arisen with regard to the policy to be adopted in respect of household contacts. This is a matter to be decided by the medical officer of health or the school medical officer, but in my opinion these contacts should be allowed to return to school or work after the elapse of the usual period of quarantine in the same way as if the patient had been removed to hospital.

General Management

Unless the weather is too rigorous ventilation of the room should approach as nearly as possible to open-air conditions, but the patient should be kept comfortably warm in bed with hot bottles and blankets. He should remain in bed for ten to fourteen days in mild cases, and in severer cases he will not be able to get up in less than three weeks. This period will require variation in complicated cases, but when apyrexial and general conditions warrant it, even those with otorrhoea or rhinorrhoea are better to be up in the open air.

Diet during the febrile stage should be milk given in regular feeds at stated times, with plenty of water, imperial drink, or still lemonade between-whiles. When the temperature is normal, milk puddings may be added for a day or two, and then gradually augmented by fish, tripe, or chicken, until at the end of a fortnight the patient should be on a full mixed diet. Blanket bathing should be carried out every day, and when the patient is up hot baths may be taken daily if it can be arranged. In the early stage the toilet of the mouth should be performed by swabbing the tongue, gums, and cheeks with boroglycerin. Local treatment of the throat is limited to frequent simple gargles, but if faucial angina is marked irrigations from a douche-can with hot sodium bicarbonate solution (6 grains to 1 oz.) every three or four hours is useful and comforting. Aperients should be administered if necessary, and it is well to commence treatment with a brisk saline purge.

Daily routine testing of the urine is a hard-and-fast rule for the first four weeks of the disease. In the early stages restlessness and mild delirium is usually controlled by aspirin, but if this is more marked paraldehyde, in doses of 1 to 2 drachms, will be required. If the temperature reaches 103° or 104° F., tepid sponging will make the patient more comfortable and induce sleep.

Specific Treatment

The effect of this may be summed up by saying that the injection of scarlet fever antitoxin exerts a well-marked and constant effect on the early eruptive stage of the disease, and may do something to reduce the incidence of complications. Since many patients suffering from the present mild epidemic type of the disease make excellent recoveries without serum, its use is generally reserved for the severer forms of the simpler type, and for all cases of the toxic and septic types. It should be employed if the temperature is above 102° F. ; if the rash is very bright ; if there is well-marked faucial angina ; if there is well-marked restlessness or delirium ; or if any or all these signs are present in children under 5 years of age.

To be effective serum should be administered as soon as possible, and in the simpler type the dose should be 10 to 20 c.cm. given intramuscularly into the lateral aspect of the thigh. The effect is seen in a fall of temperature by crisis, a reduction in the pulse rate, early fading of the rash, and amelioration of the symptoms—particularly those referred to the throat. If a fall of temperature does not occur in twenty-four hours then the injection should be repeated, but the practitioner need not be disappointed if in these circumstances the expected effect does not take place, since the pyrexia is probably due to early adenitis or otitis. In the toxic and septic types 30 to 50 c.cm. should be given intravenously. When the latter route is employed the foot of the bed should be raised, hot bottles placed in the bed, and 5 minims of adrenaline administered hypodermically a few minutes beforehand to minimize or prevent serum shock. Serum should be warmed before injection by standing the phials in warm water at body temperature.

Prevention of Serum Sequelae

As always, before giving serum the patient's history should be inquired into in respect of previous serum administration, and particularly with regard to allergic manifestations such as asthma or hay fever. In the latter case, and if intravenous injection is considered imperative, attempts to desensitize the patient should be made by giving 0.1 c.cm. subcutaneously and doubling the dose every twenty minutes until 1 c.cm. has been given, thereafter proceeding with the intravenous route, commencing with 0.1 c.cm. and doubling the dose every twenty minutes until the required therapeutic dose has been given. Obviously it is only in the most desperate

cases that such a laborious procedure would be undertaken, and in cases in which there is a previous history of serum injection or in which the intramuscular route is chosen the older method of injecting 0.5 c.cm. of serum subcutaneously and waiting four hours before giving the intramuscular injection will provide an ample margin of safety. In 20 to 30 per cent. of cases one or other of the various manifestations of serum sickness come on six to twelve days after injection. Skin irritation, due to serum rashes, may be allayed by local application of calamine lotion, or, if the patient is very uncomfortable, by the hypodermic injection of 5 to 10 minims of adrenaline.

Complications

Early arthritis is treated by rest of the affected joints and the local application of oil of wintergreen. The relatively rare late arthritis of the rheumatic type associated with endocarditis is treated on the same principles as acute rheumatism, and prolonged rest will be required. In a few cases of this type the writer has seen striking benefit result from the intravenous injection of scarlet fever antitoxin in 10 c.cm. doses. Pericarditis, now also uncommon, should be treated by counter-irritants, but paracentesis and surgical intervention may be necessary. Suppurative arthritis, now almost unknown, will require the assistance of the orthopaedic surgeon.

OTITIS MEDIA

Otitis media, if it gives warning of its presence by acute symptoms, should be treated by myringotomy under general anaesthesia, but in the majority of cases otorrhoea will be the first indication of its occurrence. This should be treated on conservative lines by mopping out the ear thoroughly every three or four hours with a small pledget of dry cotton-wool securely wrapped round the end of a wooden probe, and finally by instilling a few drops of glycerin of carbolic. If persisted in conscientiously the bulk of cases will yield to this treatment, but in a certain number the condition becomes chronic. It cannot be said that there is agreement as to the most efficacious treatment of the condition at this stage, and some consider that removal of tonsils and adenoids is effective, while others maintain that a mastoid operation is necessary. In any case the patient's general condition should be maintained by liberal dieting and abundant fresh air. During the course of otitis media the possibility of mastoiditis should never be lost sight of, and should unequivocal signs appear immediate surgical intervention is necessary. Unfortunately, the onset of mastoiditis in scarlet fever may be most insidious, and the decision as to operation give rise to the most anxious consideration. A way out of the difficulty may occasionally be found by performing Wilde's incision—that is, an incision over the mastoid, behind and parallel to the ear fold, through the periosteum and down to the bone. If this is not followed by a fall in temperature and pulse and an improvement in the patient's general condition in twenty-four to forty-eight hours, a mastoid operation should be performed.

ADENITIS AND RHINITIS

Cervical adenitis may be treated simply by the application of wool and a bandage, but linseed poultices or antiphlogistine may hasten resolution in well-marked cases. If suppuration occurs hot fomentations should be applied, but incision and drainage should be delayed until very obvious fluctuation is present.

Rhinitis is often an intractable complication, and is an indication for plenty of fresh air. Gentle nasal douching with sodium bicarbonate, biborate, and chloride, 2 drachms of each to the pint, should be carried out three times a day. Insufflations of dimol applied by an atomizer are also useful twice daily, and as adjuvant to both these procedures the nasal mucosa may be sprayed beforehand with adrenaline. The nostrils should be smeared with zinc ointment to prevent excoriation, and in small children constant swabbing is necessary to prevent discharge infecting the conjunctivae. In chronic cases the services of the rhinologist may be sought for the correction of deformities in the nose or for the treatment of pathological conditions of the antra.

NEPHRITIS

Nephritis requires energetic treatment at the outset. A blanket bed is provided and the skin encouraged to act with two or three hot bottles. A purgative is given (30 to 40 grains of compound powder of jalap), and the patient is put on a milk diet until the urine is clear for a few days. The bulk of the cases will yield to this, but in some, in order to secure efficient action of the skin, hot packs will be needed. An alkaline mixture containing 30 grains each of sodium bicarbonate and potassium citrate in an ounce of water three times daily sometimes has a striking effect in clearing up the condition. If uraemia appears the withdrawal of five to twenty ounces of blood, according to the age of the patient, should be made, and convulsions controlled by light anaesthesia. The persistence of a small amount of albuminuria in spite of dietetic restrictions in the late stages of the complication will sometimes yield to cautious additions to the diet.

Toxic and Septic Types

Toxic scarlet fever, in addition to prompt serum treatment, requires frequent hot packs and hypodermic injections of strychnine, 1/100 to 1/60 grain four-hourly. Extreme delirium, occasionally encountered in these cases, will need full doses of morphine and hyoscine. For the septic type of the disease the administration of maximum doses of antitoxin is necessary, and in addition an open-air regime should be insisted on. The patient should be fed frequently, one or other of the proprietary foods such as Benger's, being most suitable; and if nourishment is resisted on account of pain and difficulty in swallowing, the nasal tube should be employed. In the true septic case the patient will nearly always resist local treatment of the throat, but in those who will tolerate it gentle douching with hot sodium bicarbonate solution every two hours should be carried out.

The various complications, such as adenitis, rhinitis, and otitis, which are bound to appear early, should be treated on the lines indicated, and if bronchopneumonia appears stimulation by strychnine injection is required. Oxygen, preferably by means of the tent devised by Dr. E. P. Poulton, or failing that by means of the nasal catheter, should be administered early, and linseed poultices applied to the chest. The practitioner should be on the look out for a streptococcal pleural effusion, and if this occurs daily aspiration should be performed at first. If later the effusion becomes purulent surgical treatment will be necessary.

Period of Isolation

In the uncomplicated case the patient may safely be released at the end of four weeks, irrespective of the stage of desquamation, but he should not be allowed to return to school or work for a fortnight after the termination of isolation. If suppurative or catarrhal discharges are present, however, isolation should be maintained till these clear up. When isolation is concluded the local public health department will arrange for the disinfection of pillows, mattress, and blankets, whilst the room should be subjected to a thorough spring cleaning before it is once again used for its ordinary purposes.

UNIVERSITY OF DURHAM: PROPOSED NEW CONSTITUTION

FUTURE OF COLLEGE OF MEDICINE

The report of the Royal Commission appointed a year ago to inquire into the organization and work of the University of Durham and its constituent colleges has been laid on the table of the House of Commons.[1] The chairman of the Commission was Lord Moyne, and the commissioners included one member of the medical profession, Professor H. R. Dean of Cambridge.

Durham has educational traditions going far back into past centuries, but the University is little more than a hundred years old. It consists of two divisions: Durham, comprising a number of colleges and halls of residence; and Newcastle, comprising two independent units—the College of Medicine and Armstrong College. Armstrong College was established, though not under that name, in 1871, and is a multi-faculty college providing instruction in arts and sciences. The College of Medicine, as the Newcastle School of Medicine and Surgery, began in 1834, has been connected with Durham University since 1852, and has occupied its present premises, now inadequate, since 1889. The College is governed by a court of contributory and representative governors, and the executive is a council elected from the court and the academic board, with appointees of other bodies. The figures quoted in the report give 333 full-time and sixty-one part-time students.

The Commission places its finger on certain defects in the structure of the University, preventing sufficient control over the constituent parts. The Senate, for example, has no voice in the appointment of professors. In no other university with a federal character have the separate colleges the power of appointment as in Durham. "We have no hesitation in saying that if the University of Durham is to become more than an uneasy federation of units it must . . . establish a real university professoriate by assuming responsibility for the appointment of its professors." One consequence of this insufficient control has been to render the University insignificant as compared with its units, on which public support and interest have been concentrated to the disregard of the corporation. Another has been to prevent the University from intervening effectively in recent controversies. It is also considered that the governing instruments of the two colleges in the Newcastle Division are not suitable for University institutions. In the College of Medicine the court (or governors) are the governing body according to statute, but the council, the executive, may suspend or refer back any order or recommendation the court passes.

AMALGAMATION OF THE NEWCASTLE COLLEGES

The outstanding recommendation of the Commission is the amalgamation of the College of Medicine and Armstrong College to form one college under a constitution to be defined in the new statutes of the University, with a principal, as chief academic and administrative officer, a council, and an academic board. The two institutions in Newcastle have always had a direct relation, each being represented on the other's council, and their students enjoying certain facilities in common. For forty years or more the teaching of the students of the College of Medicine in the fundamental sciences was undertaken by Armstrong College, but in 1932 this arrangement was terminated in anticipation of certain recommendations of the General Medical Council.

There seems to have been some misunderstanding as to the effect of these recommendations, and the chairmen of the Education and Examination Committees of the General Medical Council, who gave evidence to the Commission, stated that in their view the recommendations, actually issued in 1933, did not require such a change as the College of Medicine effected. The College council, however, decided not to enter as medical students at the College those desiring instruction in the University preparatory to sitting for the pre-registration examination, but to refer them to Armstrong College or the Durham Colleges according to local circumstances, and to undertake in the College of Medicine itself the teaching in biology and biochemistry specially related to the needs of medical students. The Commission regards this decision as unfortunate on several grounds, not least on that of broad educational policy. It takes the view that in the interests of both teachers and students it is very desirable to avoid a divorce of this specialized teaching from the University departments devoted to chemistry and biology. There should be the closest collaboration between the medical and the science departments of a university. "It is an advantage to the medical student to pursue some of his studies in an institution or department which is not wholly concerned with the professional training of doctors."

It is believed by the Commission that the time has arrived to implement the policy foreshadowed in 1908, when the University of Durham Act was passed, and to unite the two Colleges. The change will require the forbearance of all concerned, a willingness to forgo institutional ambitions, and a determination loyally to serve the new College and the University. The Commission sympathizes with the reluctance of a college, proud of the traditions accumulated during a century of medical education, to sacrifice its independent existence, but amalgamation is considered highly desirable in the interests of the University and of medical education, and those interests must be paramount. It is also realized that medicine is the senior faculty in the division, and that medical training and research equals in importance any other activity of the University, and the proposals have been framed with that in mind. The Commission suggests some special procedure to ensure that those who have had had for many years the welfare of the College at heart will be primarily responsible for the planning and provision of its projected new premises; this would be effected by a temporary board consisting, as to four of its five members, of appointees of the council of the College of Medicine.

The University College, Newcastle (the name suggested for the College in the report) should have, in the view of the Commission, a dean of medicine to guide and develop medical education and to maintain relations between the College and the hospitals where clinical teaching is given; he would be on the council and the academic board. The council of the new College should consist of members appointed by the councils of the two amalgamating institutions, the academic board, the City Council, and the associated hospitals. Its function would be to govern the College, manage its property, and control its finance. The academic board would consist of professors and readers and other representatives of the teaching staff, and would advise the council on academic matters, including the appointment of teachers (neither it nor the council would have the appointment of professors and readers), regulate instruction, admit persons to study, and promote research.

Finally, certain steps are proposed for strengthening the University, and the general structure recommended for the constituents is repeated for the University as a whole. Here again it is proposed to have two bodies: a predominantly lay court, with responsibility for finance and such control of policy as that implies; and a senate, consisting primarily of teachers of the University, with responsibility for academic affairs, including the appointment or removal of professors and readers. The court, with the chancellor at its head, would include, in addition to the University officers with the dean of medicine, members appointed by His Majesty in Council, by the senate, by the councils of the constituent colleges, and by the Newcastle City Council and the two county councils of the area.

To give effect to the recommendations, an Act of Parliament will be required, whereby statutory commissioners may be appointed to make new statutes in general accordance with the proposals. All alumni and friends of this great northern centre of education will hope that a new era of harmonious progress is be inaugurated.

[1] H.M. Stationery Office. (1s. 6d. net.)

MEDICAL RESEARCH COUNCIL

REPORT FOR 1933–4

(*Concluded from page 433*)

STUDIES IN CLINICAL MEDICINE

Workers at University College Hospital have been testing the value of synthetic thyroid principle in the treatment of myxoedema ; their results indicate that this compound is a true substitute for the natural thyroid, and active by mouth. Attempts to find a correlation between the blood esterase and the heart rate have not been successful. It has been shown that sodium chloride increases the susceptibility of pneumococci to dissolution by bile salts. Possibly, therefore, the bile salt treatment of pneumococcal empyema might be improved by increasing the sodium chloride concentration in the empyema cavity. The value of prostigmin in post-operative flatulence has been proved at St. Bartholomew's Hospital. At Guy's an attempt has been made to find out whether tonsillectomy reduces the liability to nephritis after scarlet fever ; apparently it does not, nor does the administration of scarlet fever antiserum. At Manchester investigations into haemopoietin in the hog's stomach have confirmed its enzyme nature. There seems to be no relation between the iron and copper contents of liver and stomach preparations and their efficacy in the treatment of pernicious anaemia. Work on anaemia is also being carried on in Newcastle, with particular reference to the principle in yeast and wheat germ which is efficient. This factor appears to resemble Castle's extrinsic factor and to owe its therapeutic effect to the power of the stomach to secrete an intrinsic factor. Also at Newcastle it has been possible to produce temperatures of 104° to 105° F. by high-frequency within an hour, and to maintain them for six hours without serious discomfort to the patient.

At Liverpool it has been observed that the serum magnesium is increased in chronic nephritis with uraemia and in enlarged prostate causing retention of urine. It remains normal during epileptic fits, although generally it varies inversely with the blood calcium. From Edinburgh come reports on the nervous control of the human heart, and ephedrine by mouth has been found to be of value in preventing the attacks of unconsciousness of patients with heart-block.

The Council provides the expenses of a follow-up scheme at St. Mark's Hospital, London, where the grouping of cancer cases according to the proved depth of spread has been continued. The results indicate that the combined perineo-abdominal incision gives better results than the perineal operation. At Cardiff the surgery of the sympathetic nervous system is being studied, and the process of regeneration is being compared with that in somatic nerves.

DISEASES OF WOMEN AND CHILDREN

Infections of the urinary tract in pregnant women are being studied in Glasgow, and an inquiry is being made into the late results of pregnancy pyelitis. It has been demonstrated that pyelitis after childbirth is the cause of 10 per cent. of puerperal morbidity. In the course of another research considerable variations have been found in the protein and mineral content of the amniotic fluid, but the significance of the variations is not yet clear. The incidence of contracted pelvis has been shown to be highest in Glasgow and Lanarkshire and low in the northern parts of Scotland. Research on the sources of infection in puerperal fever are still being carried out at Queen Charlotte's. Certain organisms, which resemble *Streptococcus pyogenes* but have biochemical properties different from those of the strains that cause most human infections, have been found incapable of causing puerperal fever, because of their susceptibility to destruction by the human blood. Attempts are being made to produce immunity to *S. pyogenes* by injections of a fibrolytic ferment. In Sheffield a mask has been devised to prevent droplet infection in obstetric cases. It has been confirmed that oestrin enhances the response to oxytocin. The interrelations between pituitary function, the ovarian cycle, and calcium metabolism have been investigated at the London School of Economics, and the action of luteal hormone in pregnacy and parturition at Edinburgh.

Further work is being done on the effect of adding extra rations of vitamins A and D to the diet of children with measles. Investigation of a series of cases of "nutritional" anaemia which failed to respond to iron, copper, or vitamin B revealed that a chronic infection was responsible. It has been proved that boiling does not impair the nutritive efficiency of cow's milk or affect its digestion by the infant.

WORK ON NUTRITION

From a number of studies of family diets and foodstuffs it appears that bone and vegetable broths have little nutritive value. A theory that pellagra is due to defective protein supply has received no support from further investigation. Attempts are being made to find a satisfactory method for measuring minute quantities of iodine in foodstuffs and soils, and it has been shown that very large goitres can be produced in puppies by restricting maternal iodine during successive pregnancies. Restriction in the young animal does not produce such large swellings. A great deal of work has been done on vitamin standardization and the relation of vitamin A to infection ; it has been possible to express the relation between carotene preparations and vitamin A on a quantitative basis. The material on which the cod lives in spring and summer contains a measurable amount of vitamin D, and it seems probable that the store in the liver is derived from this source. The amount seems to depend solely on the age of the fish. The need for a full ration of unsaturated fatty acid has been shown by an inquiry into the influence of a fat-deficient diet on the skin. The stability of vitamin C in apples under conditions of storage and canning, and the active principle in apple juice which prevents scurvy, have received attention. The primary function of vitamin C in the dental tissues is in the activation of the formative cells, and it is necessary for the production of enamel and cement. Human beings have been found to have a limited power of storage of vitamin C, as well as of partial destruction of it within the body. This vitamin is present in relatively large amounts in a number of previously unsuspected sites in the animal body, including the suprarenal medulla and the lens of the eye. In vegetables various hexose sugars may serve as precursors. Vitamin B_2 has been found to be a complex of factors, of which flavine seems to be the growth-promoting component, but the flavine pigments recently isolated at Heidelberg can only partly replace B_2 in the diet. Some factor in this vitamin seems to have a beneficial effect on certain types of skin disease, and this is being investigated. It is now clear that vitamin E is an unsaturated alcohol, though it has not yet been prepared in a pure form.

According to work at Aberdeen, the so-called "diabetic centre" consists of two separate parts, pontine and medullary. An injury between the medulla and the pons leads to hyperglycaemia, whereas one below the medulla causes a rapid fall in the blood sugar. Further researches are being made on the relation of the two parts of the centre to the vagus nerves and pituitary and adrenal glands.

PSYCHOLOGICAL AND PHYSIOLOGICAL RESEARCHES

The National Hospital, Queen Square, has worked on the central connexions of the autonomic nervous system and the nervous regulation of body temperature. A striking loss of myelin in the peripheral nerves has been demonstrated in subacute combined degeneration of the cord. The halogen content of the body fluids in epileptics has been studied with special reference to the effect of bromide treatment. At Oxford a study of the vagal control of the heart rate has been concluded, and the superior cervical ganglion has been shown to have a functional activity similar to that of a simple reflex centre in the cord.

The study of mental deficiency has been continued at Colchester, and a statistical analysis of over 200 cases has indicated that the mother's age is a more important factor than the order of birth.

Results of an investigation into the development of the bird's knee-joint in tissue culture indicate that bone, cartilage, and muscle have a strict regional determination before they can be recognized microscopically, and that the tissues destined to form bone, cartilage, and muscle do not originate in the situation which they finally occupy. Two oestrogenic compounds have been found to induce organization in embryonic tissues ; and an impurity in crude glycogen acts in this way for amphibian tissues.

Investigations on the adrenal gland at Sheffield and St. Thomas's Hospital indicate that adrenaline releases a specific dilator at the sympathetic nerve endings. The inorganic constituents of the cerebro-spinal fluid in health and disease are being worked out at Cambridge, and a relation between chronic magnesium deficiency and scurvy has been established, though the two conditions are by no means identical.

These are but a few of the many and varied directions in which knowledge is being advanced with the assistance and under the supervision of the Medical Research Council.

PHYSICAL SYMPTOMS OF ACUTE CONFUSIONAL INSANITY

Dr. LEWIS BRUCE'S MAUDSLEY LECTURE

The sixteenth Maudsley Lecture under the auspices of the Royal Medico-Psychological Association was delivered by Dr. Lewis C. Bruce at the Royal Society of Medicine on February 28th. The subject was " Observations on the Physical Symptoms of Acute Confusional Insanity." Dr. Daniel Rambaut was in the chair, and introduced Dr. Bruce as one of the most brilliant and original minds in Scottish psychiatry.

Dr. Bruce began his lecture by remarking on the lack of knowledge as to the causes of insanity, and unless the cause were known the disease could not be efficiently treated. Could it be said that the incidence of insanity had been lowered or the probability of recovery enhanced? In only one disease, general paralysis of the insane, was the cause really known and effective treatment instituted. It was said that if only cases of insanity were obtained early enough the condition of affairs could be improved. But what was meant by an early case? The prominent symptoms of mania, delirium, confusion, which were seen in a mental hospital, were merely incidents in a long continued secret disease process, the underminings and premonitions of which were not readily assessible. There was a factor of hereditary transmission in certainly 40 per cent. of insanity cases, but there must have been a time in any family when there was no such predisposition, and therefore the knowledge of causation was no further advanced by bringing in heredity.

In the group of insanities of which he was speaking there was a prodromal period in some cases, but the alienist very seldom saw it. During this period there was confusion of thought, restlessness, sleeplessness, some disorder of the action of the heart and the stomach, and then the acute condition came on suddenly, with acute confusion, vivid hallucinations of sight and hearing, disorder of function, and great lessening of the common sensibility of the body. With care and nursing 90 per cent. of these cases recovered. From the primary attack, even if it lasted for as long as five years, the patient as a rule made a complete recovery ; it was the secondary attacks which complicated the situation. In his own cases there were relapses in 40 per cent., and the curious thing was that the relapses always occurred in the cases which had recovered too readily. If the primary attack had lasted a considerable period, perhaps one year, perhaps even five years, the eventual restoration was apparently permanent. Another curious fact was that while a second attack might be very similar to the first, if there were a succession of attacks the final condition so far as the mental symptoms were concerned was one often resembling the excited stage of manic-depressive insanity, and not to be diagnosed without the history.

TEMPERATURE VARIATIONS

All who had seen cases of acute confusional insanity without any obvious cause must have been struck by the apparent illness of the patients. They were very often in what might be described as a " typhoid state," though the temperature actually was very little upset, rarely above 100°, and transient, afterwards tending to be subnormal, though the patient still looked physically and mentally ill. Should the patient accidentally acquire an intercurrent infection such as erysipelas—which was common among these patients because they scratched themselves—and the temperature went up to 104° or 105°, the mental symptoms might absolutely disappear. These cases might be compared with other cases of confusion, such as apical pneumonia, where there was no doubt about the active cause. If one paid regard to the mental symptoms alone in such a condition it would be regarded as a case of acute confusional insanity ; the same was true of puerperal states with confusion and a temperature running up to 104° or 105°. One might say that there were two distinct types of confusion, one in which no cause could be ascertained and there was no temperature, and the other in which there was a definite lesion and a high temperature. But there was a factor common to all these cases—namely, the mental symptoms. On the other hand, everyone had had experience of any number of cases of chronic toxaemia, pneumonia, and puerperal fever, not one of which had exhibited mental symptoms. Why was it that one individual out of a certain number developed mental symptoms when coming up against adverse circumstances? Was it due to hypersensitivity to a specific group of poisons, or to the fact that the individual was inadequately supplied with the defences which the majority of mankind possessed against the ordinary toxaemias met with in daily life?

Far back in the treatment of insanities alienists had tried to produce a febrile condition which would be safe and easily managed with the object of improving the patient's state. In recent years general paralysis had been treated by the induction of malaria. Very many years ago he had tried the plan of injecting a polyvalent streptococcus, but without producing any reaction. Then he tried the intravenous injection of staphylococcus vaccines, with scarcely better results. He also tried intravenous injections of typhoid and paratyphoid " A " and " B " and *B. coli communis* vaccines, and never had a single success, although high temperatures and strong reactions were produced. When malaria therapy came in, the first case in which he tried it proved a magnificent success, the patient making a complete recovery, but despite repeated trials he had never obtained another success in a confusional case. Yet other confusional cases cleared up after accidental contaminations with the streptococcus, and two of them after contracting scarlet fever.

He had tried to bring about recovery by inducing leucocytosis, but he had given up the use of vaccines for this purpose, because he feared that they unduly loaded the dice against the patients. Injections of sterile water were extraordinarily beneficial. He gave 1 to 5 c.cm., using it regularly in all the acute conditions, and it produced a rise in leucocytes. But whatever treatment was applied it had to be remembered that it was only the resisting power of the patient that was being raised, and that the patient was still suffering from a toxaemia ; he was, so to speak, sitting on a volcano, and any adverse circumstance, mental or physical, which lowered his resisting power was likely to bring about another attack. The high neutrophil leucocyte count was a good sign as indicating that the patient had resisting power. The rise in leucocytes was protective in character.

RENAL FUNCTION

Dr. Bruce next discussed renal function in these cases. In the chronic insane the pathologist could demonstrate lesions in the kidney with great frequency, but he was inclined to believe that the condition of nephrosis or whatever it might be was the result of a long-continued chronic disease, and not of the acute onset of the disease process which was under consideration at the moment. His more recent records of the urine in cases of acute confusional insanity showed that 60 per cent. had albumin in the urine and 40 per cent. had more or less marked bacilluria. One feature of these kidney symptoms was their transience.

It was not until about three years ago that, having to make a blood sugar test of a confusional case, he was greatly struck by the extraordinarily low blood sugar he obtained, and after that he had a blood sugar test made in every case. He had so far only fourteen complete cases to bring forward, but of that number twelve showed glycosuria, and the whole of them evidenced some abnormality, chiefly towards the end of the test. Seven of these patients had already recovered. Having noticed in all these cases that they were very inadequately supplied with sugar in the blood, he thought it would be a good plan of treatment to give them abundant sugar in the food, together with insulin to assist in absorption. Therefore he selected two cases and gave 10 units of insulin in the morning and 10 at night, with a tablespoonful of glucose before each injection, and a rich carbohydrate diet. On the following day these patients were in acute delirium. Neutrophil leucocytes were found to be reduced in these cases after insulin injections. Insulin injections in diabetics raised the leucocytes, but in these cases had the contrary effect.

In conclusion, Dr. Bruce said that he hoped the few observations he had made would lend support to his view that in these conditions of disease many functions of the body were disordered. For thirty-five years, in every acute case that had come into his hands, he had sought for some cause, with singular lack of success. He thought he had made over 200 blood observations with a view to getting bacteria from the blood; he had been successful only twice: once in confusional insanity, and once in the manic-depressive state. All the other cases which he thought were the genuine condition and could be treated, and in fact were treated with success, he could count on the fingers of one hand. But it did not necessarily follow that the causation of these conditions would not eventually be discovered. His belief was that the advances of medicine were such that no one brain was now capable of tackling the problem, and that research in the future must be on communal lines. The ideal would be to have an annexe attached to some large hospital, where the physician in charge, who knew mental diseases, but also had a knowledge of general medicine, would be able to call upon the expert assistance at the hospital—bacteriologists, pathologists, gynaecologists, and others. The annexe would consist of ten or twelve beds; it would be expensive, but with the specialized knowledge of the hospital staff available it would be possible to concentrate upon one type of mental disease at a time—for example, confusional cases, which seemed to be very closely akin to the disorders met with in general medicine—and endeavour to elucidate it.

An international grape congress was recently held in Paris under the presidency of Professor Marcel Labbé, and was attended by the Minister of Public Health, the President of the Academy of Medicine, the Dean of the Medical Faculty, and the Minister of Agriculture. Papers were read by Professor Zunz of Brussels and Vogel of Dresden on the grape as food, by Drs. Douanet of Moissac and Lorier of Paris on grapes and the child, by Drs. Legrain of Paris, Boudry of La Bourboule, and Revilliod of Geneva on the grape in medical practice, and by Dr. Santocchi of Cairo on the colonial failure of the grape.

OSTEOPATHS BILL: SELECT COMMITTEE

FIRST SITTING

The first sitting of the House of Lords Select Committee on the Registration and Regulation of Osteopaths Bill was held on March 4th. Lord AMULREE presided, the other members being Viscounts Elibank and Esher and Lords Carnock, Dawson of Penn, Marley, and Redesdale.

The case of the applicants in support of the Bill was first heard. These were the British Osteopathic Association, the Incorporated Association of Osteopaths, the Osteopathic Defence League, and the British School of Osteopathy. They were represented by Mr. J. H. Thorpe, K.C., and Mr. Harold Murphy, counsel. On the other side the British Medical Association was represented by Sir William Jowitt, K.C., and Mr. H. C. Dickens, and other opposing bodies were also represented by counsel.

Argument in Support of the Bill

Mr. THORPE, K.C., said that the British Osteopathic Association, the first of the four bodies for which he appeared, was formed in 1910 to unite osteopathic practitioners in the British Isles as a professional body and educate the public as to the value of osteopathy; it had seventy-one members. The Incorporated Association had for its object the incorporation of osteopaths practising in this country or elsewhere holding diplomas of the British School of Osteopathy. The Defence League was formed by Mr. J. H. Streeter, who had defrayed all its charges. Of the British School of Osteopathy he would speak later. A number of persons in this country, skilled and unskilled, practised or purported to practise the art of healing known as osteopathy, and the public in increasing numbers desired to be treated by this method. At present anybody in this country could call himself an osteopath, so that the public did not know who were trained and who untrained. That was a danger to the community and unfair to the skilled osteopath, who was always at the mercy of plausible imitators. It was therefore expedient that the practice of osteopathy should be recognized, defined, and controlled by Parliament. He then explained the proposals of the Bill as to the setting up of a board and the establishment of a register. The absence of any representative of orthodox medicine from the proposed board had been criticized, but at the time the Bill was promoted it was not practicable to suggest such a representative; as matters stood it would be contrary to professional ethics for any medical man to associate himself with an unregistered practitioner, but the osteopaths so far as they were concerned would welcome the addition of such a representative. The determination of title to register would mean laying down a standard of qualification. Here the learned counsel gave a short account of the history of osteopathy and of the formulator of the system, Andrew Still (1828–1927), born in Virginia. He became a physician, but came to distrust the use of drugs and went back to *vis medicatrix naturae* and the aiding of nature by the mechanical readjustment of the disordered body. He believed that the body itself contained all the medicines necessary to safeguard health and cure disease. Orthodox medicine, with its acceptance of immunology and the causation of antibodies, had now gone some way in the same direction. It was important on this hypothesis to remove structural irregularities which impaired the flow of vital secretions. These structural maladjustments were called by the osteopath "lesions." Looking at the human form, Still came to the conclusion that the most important anatomical structure was the spine, from which all the nerves radiated; it was the "key pillar" of the body. Their lordships were not asked to say whether the theory was well founded or not. It would be unfortunate if their decision were taken as a vindication or as a condemnation of osteopathy.

Osteopaths did not claim to cure all diseases. An obvious instance was amoebic dysentery, which required emetine. Another type of disease could only be treated by mercury, and there were other diseases, due to invasion by a parasite, which required specific drug treatment. But if any dysfunction of

the body were adjusted the individual was less likely to fall a prey to these foreign invaders or to resist an attack if they had already gained entrance. In the United States there were 8,599 people practising as qualified osteopaths; in Canada, 137; in Great Britain and Ireland, 179; and in other countries, 27. But no fewer than 2,000 people were practising in this country with no qualification at all. After describing the way in which the practice of osteopathy was recognized and regulated in America, and the institutions for osteopathic education in that country, and mentioning the recognition of osteopaths in four provinces of Canada, counsel described the work of the British School of Osteopathy, founded in 1917, in which ninety-eight students had been granted diplomas, while forty-five were now undertaking the courses, which lasted for four years. During the first two years the student took a course in physics, biology, chemistry, anatomy, physiology, histology, embryology, biochemistry, and dissection—the same curriculum as was followed by a student in a medical school. At the end of two years the cleavage took place; the medical student had still to learn medicine and drugs and major surgery, and his course took five years in all. The osteopathic student, having completed his two years, spent two further years in studying the practice of osteopathy. Inasmuch as his practice did not involve materia medica and major surgery it was clear that he would be wasting his time in studying matters which did not come within the ambit of his proposed profession. At the end of four years he was as well qualified to carry out the work he proposed to do as was the medical student to practise medicine at the end of five. To insist that he should qualify medically would be like compelling a Roman Catholic who desired to be a priest to qualify first for ordination in the Church of England. To the British School there was attached a clinic where in 1934 1,800 patients were treated, and there were thirteen other affiliated clinics. It was rather remarkable that there should be such a school at all when it was considered that the young man who wished to be an osteopath could expect no professional status and could not be guaranteed "against his own butler setting up next door to him." He would be shunned by the more privileged practitioners of medicine and looked upon as a quack. It was said that the Bill was an attempt to get people into medicine by the back door; but it was always open to the embryo healer to go in by the front door. The orthodox medical practitioner and the osteopath came from the same social class, and the young man could make his choice: either five years of medical study and then an orthodox medical man with all the prizes that that involved; or four years of osteopathic training, and afterwards, although able to pursue his enthusiasm, looked upon as a pariah among healers, and a man with whom no registered medical practitioner would consult. In this Bill osteopaths did not ask for the power to compete with orthodox practitioners, but if the position of the osteopath were recognized by Parliament, and it were laid down quite clearly what he might do, and by inference what he might not do, this would result to the benefit and protection of the public (who, if they found speedier cures in osteopathic treatment than in orthodox medicine for certain conditions, should certainly have the opportunity of obtaining them), and would be a measure of justice to osteopaths themselves.

Lord Dawson asked what diseases were included in the purview of osteopathy, but counsel urged that that was a question which should be addressed to his witnesses.

Suggested Amendments in the Bill

Mr. Thorpe then, on behalf of the osteopathic bodies, suggested certain amendments in the Bill.[1] The first was that in Clause 1 (2) there should be inserted the following definition of osteopathy:

> "Osteopathy means that system of the healing art which places the chief emphasis on the structural integrity of the body mechanism as being the most important single factor in maintaining the well-being of the organism in health and disease."

This was the model clause advanced by the American School of Osteopathy for inclusion when a model clause was required in American legislation.

[1] A summary of the provisions of the Bill appeared in the *Supplement* to the *British Medical Journal* of January 5th, 1935, p. 4.

A further definition of major surgery appeared necessary:

> "Major surgery means instrumental operations which involve such removal of diseased tissues, organs, limbs, and other operations as a general practitioner would usually require a surgeon to perform."

Osteopaths did not claim to be able to perform major operations.

It was also proposed that another clause be substituted for 7 (2), which at present read:

> "An osteopath . . . shall have the power to sign certificates of birth and certify the cause of death and sign certificates of death, and provided he is licensed as hereinafter provided, to administer anaesthetics and perform minor operations."

He could not honestly press that very strongly in the public interest, and it was suggested that the following be substituted:

> "An osteopath shall not administer general anaesthetics nor perform major surgery nor practise midwifery."

Some rewording of Clause 8 (1) was desired, as follows:

> "No person shall unless he is registered under this Act hold himself out whether directly or indirectly or by the use of degrees or otherwise as an osteopath."

Lord Dawson asked whether that would exclude the qualified medical practitioner from practising osteopathy, and Mr. Thorpe said that it would not. Mr. Thorpe also added that in the first schedule the osteopaths made the respectful suggestion that there should be added to the board a registered medical practitioner appointed by the General Medical Council, the representation of osteopaths' organizations being reduced by one accordingly. It was in this amended form that, on instructions, he pressed for the Bill.

Mr. Streeter Examined

The first witness was Mr. W. A. Streeter, who was examined by Mr. Murphy. Mr. Streeter said that he practised in Park Street, London, as a doctor of osteopathy. He had been in practice since 1907. He was a graduate of the American College of Osteopathy at Kirksville, Missouri, the first college founded in the United States by Dr. Andrew Still. He had been led actively to promote legislative measures on behalf of osteopaths because of the difficulty experienced by them principally in obtaining the services of anaesthetists. In 1925, at Bush House, he established the first free osteopathic clinic for the deaf in Europe, and treated several thousand cases. There he had the services of "a very brave person" as anaesthetist, who was willing to defy the General Medical Council, but he found difficulty in retaining him, and was obliged ultimately to close the clinic. In endeavouring to secure registration of osteopaths he had no hostility to the medical profession, and he recognized the great importance of maintaining the present standards of medical education. So far from the registration of osteopaths involving any degradation of such standards, it would improve them. Osteopaths suffered at present from the lack of control of those who held themselves out to practise osteopathy. There were no means of enforcing discipline, the membership of the professional associations being voluntary. He knew of no method under present conditions whereby a person desiring to obtain osteopathic treatment could be assured that the practitioner to whom he went had proper qualifications. The number of osteopaths with qualifications practising in this country was from 150 to 175, but those purporting to practise were to be numbered by the thousand. He could see no help for that state of affairs except by way of registration, and the qualified osteopaths desired that the registration and control which obtained among other classes of persons, such as dentists and pharmacists, should be extended to them. Asked whether he considered it important that he should have a status which would enable him to consult freely with medical men, he said that that was highly desirable in the interests of all parties. Difficulties at present existed in securing such consultation, though they were not so much in evidence as formerly. With regard to professional assistance, he had now the services of an anaesthetist, but he was never certain for how long he would retain them, the anaesthetist running a risk all the time from such association. Sometimes also patients were deterred from coming to him. He mentioned the case of a patient of his who was thought to have lung trouble; he

arranged through a Wimpole Street surgeon that she should be examined by a specialist. When the patient paid the specialist a second visit her husband asked if he had communicated with him (Mr. Streeter), and was told that he could not do so, and was liable to be struck off the *Medical Register* if he associated with him.

Asked for his reasons for claiming an independent status for osteopaths in the science of healing, Mr. Streeter said that osteopaths, holding different views as to the causation and cure of disease from those accepted by the medical profession, desired to have control of their own students. They were not seeking recognition by the medical profession, but regulation by the State. He could never understand why, if he studied certain textbooks in the medical curriculum he became a sound medical practitioner, but if he studied the same textbooks in an osteopathic institution he became a quack and an outlaw. He believed that the osteopath studied nearly everything in the medical curriculum, with the exception of materia medica and major surgery; many of the osteopathic colleges in the United States had also courses in therapeutics, and they taught major surgery. The proposed length of course in the Bill was four years for the osteopathic student as against five years for the medical student, but if their lordships thought it wise to increase the length of training he did not think it would make the course too onerous, provided they had control of their teaching organization. But he thought a great deal of time was wasted in the study of therapeutics, and as to major surgery, they were not asking for that privilege, so that their four years' course compared favourably with the five years' course in medicine.

In reply to a question as to the distinctive features of osteopathic treatment, Mr. Streeter said that the osteopath laid chief stress on the structural integrity of the body mechanism as being the most important single factor in the causation and cure of disease. Naturally, first attention was paid to the bony framework, and particularly the spinal column, but the muscular, circulatory, nervous, and lymphatic systems were not disregarded. To describe osteopathy briefly, it meant the removal of the cause wherever found. They recognized and used antiseptics, antidotes for poisons, and radical surgery for the removal of new growths, when these became dangerous to the functions of organic life. Dietetics and psychology were also recognized in osteopathic teaching. He claimed that osteopathy was in harmony with modern scientific pathology.

"One of the first principles Dr. Still laid down was that under ordinary conditions, excepting, of course, accidents and injury, environment, and heredity, the human body contained within itself all the substances necessary for the cure of disease, but that it is necessary for the human machine to be in a good state of adjustment for all those substances to work properly. We feel that the whole tendency of modern research is backing up that concept."

Osteopaths recognized the presence of bacteria in and on the human body in association with disease; they did not think them the primary cause. Asked what range of diseases and bodily infirmities he regarded as outside and inside the sphere of osteopathy respectively, he said that he did not divide it up in that way. The osteopathic concept was applicable to all ailments, but that did not mean that they could take any case at any stage of its development and by adjusting a single vertebra enable the patient to get well without any other assistance. In a case like dysentery osteopaths would apply orthodox treatment in addition to their own particular treatment.

This concluded Mr. Streeter's examination in chief. On behalf of the British Medical Association Mr. Dickens asked to be allowed to defer any cross-examination in view of the fact that by reason of the amendments suggested on behalf of the osteopaths the Bill as they had known it up to that day had become altered in scope and extent. Counsel on behalf of the Royal College of Surgeons of England and of the Chartered Society of Massage and Medical Gymnastics supported the request, as they desired to consult their clients.

The request was acceded to, but Mr. Thorpe said that this absence of cross-examination put him in a difficulty, because his next witness was Dr. W. Kelman Macdonald, a qualified medical man as well as a qualified osteopath, and he had hoped to call him after Mr. Streeter had been cross-examined in order that he might clear up certain points which no doubt his learned friends would make. It was agreed, therefore, to call no further witnesses at that sitting.

Lord Dawson's Questions

Before Mr. Streeter left the witness-chair, Lord Dawson asked him a number of questions arising out of his evidence. He had said that the human body contained all the substances necessary to cure disease, also that he recognized bacteria as the cause of disease, but not the primary cause, and that he would adopt ordinary medical treatment for dysentery. It had been stated that the medical treatment for dysentery was emetine, but, so far as Lord Dawson knew, the human body did not contain emetine. How did Mr. Streeter reconcile those facts?

Mr. Streeter replied that under ordinary conditions the principles he had stated held true. If there were parasites in the intestinal tract he would regard them as invaders, and would not object to using emetine to destroy them, but he did assert the general principle that bacteria could not gain entrance into the human body unless the integrity of the tissues was broken. The following interrogation then ensued:

Lord Dawson: That is not my point. You say you would use emetine, having previously said that the human body contains everything necessary to the cure of disease.—Mr. Streeter: That is under ordinary conditions. I did not wish to imply that it did not contain emetine.

Then the human body does not contain the cure of dysentery?—I would not say it did not, but would give the patient the benefit of the doubt. I have treated many cases of amoebic dysentery myself without emetine.

In that particular case, then, the human body does not contain the substance necessary to cure that particular disease?—I am not willing to admit that it does not, but I would employ the agent in addition to my own treatment if I thought it likely to be beneficial.

What diseases do you include as coming within the purview of osteopathy?—The teaching of surgery and obstetrics and the treatment of diseases have always been included in osteopathic institutions.

That does not answer my question.—I would not exclude any case.

Then you would not exclude major surgery?—Certainly not.

I understood you to justify the shorter osteopathic course on the ground that therapeutics and major surgery were excluded?—We are not asking to do major surgery.

No; but you would not exclude anything?—If I had my choice and full rights, I think the osteopathic system includes major surgery.

What diseases would you include in osteopathy as defined in this Bill with the four years' curriculum?—The osteopathic concept applies to all ailments. We recognize accidents and injuries, environment, and heredity. That does not mean that we can take any ailment at any stage of its development.

I am not clear as to that answer. Take pernicious anaemia. Do you include that in your line of treatment?—We believe that osteopathic lesions predispose to anaemia.

No; I said pernicious anaemia?—Yes, and I believe that if we got these cases early they would not progress to that stage.

Then the answer is you would include it?—Yes, but we would not hesitate in giving liver for it.

Is that consistent with the body making everything required for the cure of disease?—I think so; we could not take every case whatever stage of development it had reached and attempt to cure it my manipulating the backbone without other aid or advice.

You say the human body contains all the substances necessary to cure disease?—Under ordinary conditions.

But disease is never ordinary. I put it to you that the treatment of pernicious anaemia by liver does not include manipulation of the spine, nor is the body in this instance able to find the cure in its own organs?—I do not know how to answer the question in any other way.

Lord Marley said that as he understood Mr. Streeter's contention it was that had the patient come to him for osteopathic treatment the condition which finally became pernicious anaemia would never arise. He took it that if a patient came to him at the stage at which pernicious anaemia had already developed he would call in a medical practitioner. Mr. Streeter: Certainly.

Lord Dawson: How would you know that a patient is likely to have pernicious anaemia before the symptoms develop?—I am not presuming to say that a patient has it before there are symptoms.

What are your osteopathic methods of getting knowledge that the patient has it?—I do not do laboratory tests myself. I have confined myself to office practice. If a patient came to me with symptoms like pernicious anaemia I would have tests and examinations made.

Do you get any warning of pernicious anaemia before this diagnosis is made? Would you agree that when the diagnosis is made it is a full-blown condition calling for urgent and forcible treatment along certain lines, and if that is the case would you not have to begin with the best treatment possible at once?—I would consider that an emergency case.

You would use liver?—Yes.

Lord Marley asked whether it was the witness's view that there were early stages not at present recognized as leading to pernicious anaemia—a mere dysharmony in the body, which might predispose to the condition—and the treatment in the early stages would be to remove the predisposition. Mr. Streeter said that that was the case exactly.

Lord Dawson: What are the evidences of that particular malady—the precursor of pernicious anaemia?—I could not answer that question. I think there is no particular premonitory symptom that could be seen a year or two beforehand.

Therefore it would be impracticable to apply any general preventive treatment?—Apart from treatment of osteopathic spinal lesions.

Would it not be a special lesion which would give a particular warning of a particular disease?—Osteopaths would never claim that the maladjustment of one vertebra meant pernicious anaemia and of another diphtheria.

In fact, therefore, we have no means of knowing what the particular dysfunction is that warns us that pernicious anaemia is on the way?—Not as a separate entity.

Lord Marley said that he thought the witness's point was that the various early discomforts of the patient might lead eventually to any one of a hundred different diseases, and therefore treatment in the early stages might be preventive.

Lord Dawson: Does osteopathy include or exclude the prescription of drugs?—I have never been taught that drugs are useless.

Would you include the prescription of drugs as part of the function of the osteopath?—I certainly think there are a few remedies that are beneficial.

Such as?—Emetine in amoebic dysentery.

Would "606" be a proper treatment for syphilis?—Yes.

And liver for pernicious anaemia?—Yes.

We can say, therefore, that there are instances where the human body does not manufacture all the remedies necessary for the cure of disease?—I think there are emergency conditions where you have to employ outside drugs.

You told us about cases of deafness, what treatment do you employ?—Particularly the reconstruction of the Eustachian tube.

What method?—Finger surgery.

Applied where?—Into the Eustachian tube.

How do you apply the finger to the Eustachian tube?—I introduce the finger into the tube and endeavour to normalize it. I do not jam the finger into the tube, but I manipulate it.

By what line of approach?—Through the mouth and postnasally up into the Eustachian tube.

What would the size of the Eustachian tube be in your experience? Equal to a steel knitting needle?—Well, I use my own fingers.

It is difficult for me to understand how you put a finger into the Eustachian tube?—I would do my best to show you at my office.

It is an anatomical impossibility to put the finger into the Eustachian tube. That (holding up a spectacle frame) is the diameter of the Eustachian tube. That is the diameter of the bony canal.

In reply to Lord Elibank Mr. Streeter said that he had no disinclination to send cases to the appropriate medical practitioner; he did so every day. Lord Curnock asked if doctors ever sent him patients, to which he replied "Very often." Lord Marley asked the difference between manipulative surgery and osteopathy, to which Mr. Streeter replied that the terms were used by all and sundry interchangeably, but actually manipulative surgery was only a small branch of osteopathy. One of the reasons why he started his campaign was to "orient" osteopathy in relation to manipulative surgery, bone-setting, and other cults.

England and Wales

L.C.C. Consultants and Specialists

The London County Council in December last agreed to the extension of the existing arrangements for the services of consultants and specialists in the hospitals under its management until March 31st. The Hospitals and Medical Services Committee now recommends that, in order to allow of the maximum co-operation between the whole-time medical staff and the consultant and specialist staff to be developed, the existing arrangements, with certain minor variations, should be continued for a period of one year from April 1st next. The number of routine sessions to be worked by consultants and specialists at grouped general hospitals and special hospitals has been limited to a total of not exceeding 223 a week. Of this number 212 sessions a week are at present being utilized. The committee is satisfied that a limit of 220 sessions a week will prove sufficient for the coming year. The existing authority for the service of thoracic surgeons has proved insufficient, and provision is to be made for 125 (instead of 100) sessions a year at the tuberculosis hospitals and 120 (instead of 100) sessions a year at the general hospitals.

The staff of the British Post-Graduate Medical School has undertaken the consultants functions at Hammersmith Hospital in relation to general medicine and surgery and obstetrics and gynaecology. By April 1st it is anticipated that the school will be in a position to supply consultant services in the following specialties: dermatology; ear, nose, and throat; ophthalmology; orthopaedics; paediatrics; and urology. The Hospitals and Medical Services Committee is satisfied that the time which the existing consultants in these specialties spend at present at Hammersmith Hospital can usefully be employed at other hospitals in the same group or in other groups. It has been arranged, however, for the provision at Hammersmith Hospital of consultants' services in the specialties named for as long as necessary in the event of the arrangements with the Post-Graduate School not being in full operation by April. As regards radiology, the Council has already made suitable arrangements at Hammersmith Hospital by the appointment of a director of the radiological department of the hospital and consulting radiologist to the Council's hospitals.

District Nursing in London

The Central Council for District Nursing in London held its annual meeting on February 28th, with Sir William Collins in the chair. The representatives of the British Medical Association on the council are Sir Comyns Berkeley, Dr. Mary A. Blair, and Dr. W. Paterson. In the twentieth annual report, which was adopted, it was stated that the scheme for the home nursing of persons coming within the scope of the public assistance department of the London County Council had now been in operation for two years, and in the second year the number of cases so attended had been 4,548, and of visits 164,202, an increase of 1,305 cases and 24,357 visits on the year before. Representations had been made that on the initial contribution from the London County Council of £4,000 a year the payment worked out at the rate of between 6d. and 8d. a visit, whereas the cost of a visit was estimated at 1s. 4d. to 1s. 6d. Further consideration, accordingly, had been given to the amount of the subsidy, and the Council had now intimated that it would be increased to £1,500 per quarter. The Middlesex County Council had increased its payments to district nursing associations for public assistance work from £609 in 1933 to £1,165 in 1934. It was also intimated that the Management Committee of the King

Edward's Hospital Fund hoped to recommend in November next that the sum of £2,000 over and above the ordinary distribution of £300,000 should be distributed to hospitals to be allocated by them to district nursing associations for out-patients attended by district nurses in their homes while still out-patients of the hospitals. Another matter referred to at the meeting was the misunderstanding which has been found to exist amongst many subscribers to the Hospital Saving Association that district nursing was, or should be, included in the benefits provided under the association scheme, so that patients are therefore disinclined to make contributions to the district nursing associations, even when able to afford to do so. The Hospital Saving Association had taken steps to make it clear that home nursing was not one of the benefits provided, and had offered £5,000 as a contribution for one year, to be distributed among the district nursing associations, but this offer was considered to be inadequate. Negotiations are proceeding between the Hospital Saving Association and the Central Council with regard to the possibility of including home nursing as an additional benefit for subscribers, and for the payment of a sufficient annual sum to the Central Council for the provision of that service. The formation or reorganization of various district nursing associations was reported, also the award of a number of bursaries, and some generous donations to the general work. It was referred to the Executive Committee, of which Sir Comyns Berkeley and Dr. Paterson (British Medical Association representatives) are members, to inquire as to the adequacy and efficiency of the provision of district nursing in London, and to report to the council, making any recommendations considered desirable with a view to systematizing and improving the arrangements.

Housing Policy

Speaking at a luncheon of the Building Societies' Association on March 1st, Sir E. Hilton Young, the Minister of Health, dealt with the policy of the new Housing Bill. He said that the very warm welcome given to the new Bill was the result of the strong public opinion that the evil of overcrowding must be remedied and a general recognition that the remedies proposed by the Bill were thoroughly practical and efficient. Criticism of the policy of the Bill had centred on a single point, that it would tend to discourage the decentralization of the urban population, and it came particularly from the champions of garden suburbs and satellite towns. The encouragement of such suburbs and new suburbs was wholly desirable, but the fear that the effect of the Bill would be to discourage them, or to stabilize an undue centralization of the population, was, he thought, the result of some misapprehension both of the purpose of the Bill and of its methods. The purpose of the Bill was, in the least possible time, to secure proper accommodation for all living under overcrowded conditions. The method was to ensure the greatest possible elasticity in providing the additional accommodation which would be needed. The new dwellings to be provided would not be exclusively dwellings in the central areas. They would include whatever number of dwellings in the outskirts of the towns were required for the overcrowded population that was being dealt with. The Bill would thus have a double effect. For that part of the overcrowded population for which residence in the inner areas was necessary it would provide a sufficient number of dwellings under proper conditions. It would provide also for those who were able to move into the outer areas. The effect of the measure would thus be actively to promote the decentralization of that part of the overcrowded population which it was possible and desirable to decentralize.

King's College Hospital

In the absence through illness of Lord Beatty, the Principal of King's College, Dr. Halliday, presided at the annual court of King's College Hospital at King's College on February 27th. In presenting the annual report he referred especially to the resignation of the Dowager Viscountess Hambleden from the Committee of Management on account of ill-health, and expressed appreciation of her services to the hospital for so many years. The report recorded the appointment of Sir Basil Blackett as deputy treasurer to Mr. Claud P. Sorocold, who was re-elected for another year. Mr. A. D. Power, who has resigned from the Committee of Management after twenty-one years of service, was elected a vice-president of the hospital. The Hon. George Colville presented the accounts, which showed a deficit for the year of £2,490. Lord Hambleden, in proposing a vote of thanks to the honorary medical staff for their services, referred especially to the valuable co-operation of the Medical Board under the chairmanship of Mr. W. Gilliatt in advising the Committee of Management in the affairs of the hospital.

Central Midwives Board

At the February meeting of the Central Midwives Board for England and Wales the Board placed on record its appreciation of the invaluable services rendered to it by the late Councillor W. J. Loxley and its deep sense of great loss which, through his death, it has suffered. The Board had before it a further letter from the medical officer of health for Willesden, asking it to reconsider its decision not to consider the approval of training eight pupils at one time at the Willesden Maternity Hospital until the new beds, which are shortly to be made available for use, have actually been in use for a time. It was agreed to grant the application. A letter of resignation was read from Dr. S. Lewis Graham, one of the Board's examiners at the Birmingham centre, as he is now living in Scotland. The Board accorded its best thanks to Dr. Graham for his efficient service as one of its examiners. A letter was read from the War Office, enclosing a copy of a letter which it has addressed to the officers commanding the various military families' hospitals in the United Kingdom, instructing them to notify immediately the local supervising authority of all cases of infection arising in the maternity departments of those hospitals, and asking the Board to approve, under Rule E2, the Louise Margaret Hospital at Aldershot and eleven military families' hospitals in different parts of the country. It was agreed to grant the application.

Information on Health and Education

The Minister of Health and the President of the Board of Education have had jointly under consideration the arrangements for the work of intelligence and public relations in their respective Departments. They have decided, in the interests of better organization, and for the wider collection, dissemination, and publication of information on the various aspects of the important social problems falling within the province of their Departments, that the Intelligence Branch of the Ministry and the Office of Special Inquiries and Reports of the Board should be placed under the control of a single director, and that a press officer should be appointed and attached to the joint division. Mr. S. H. Wood of the Board of Education has been appointed director of intelligence and public relations and of the Office of Special Inquiries and Reports, and Mr. S. R. Chaloner has been appointed press officer. These arrangements will take effect on March 30th.

Scotland

Glasgow Royal Mental Hospital

At the annual meeting of contributors to Glasgow Royal Mental Hospital, held on February 27th, Dr. Angus MacNiven, physician-superintendent of the institution, pointed out in his report that the high proportion of voluntary patients entering mental hospitals indicated that people were developing a proper attitude towards mental illness. Nevertheless, the cases of mental disease treated in such institutions constituted at the present time only a small proportion of the total of mental illness existing in the community. The investigation of cases of minor types of neurosis and psychoneurosis was an urgent and important problem which unfortunately had not so far been adequately tackled. The suffering they caused and the economic loss to the community that they entailed was enormous, and it was not an exaggeration to say that neuroses occurred more frequently than any other form of illness. A recent investigation had shown that in a group of 1,000 cases referred to a referee under the National Health Insurance Act, it was estimated that in about 300 patients the inability to work was due to the presence of a mental illness of the neurotic type. In a considerable proportion of the cases the neurosis was the primary condition, although in others it occurred as a complication of some physical disorder. Many cases of neurotic disorder did not come under medical supervision, because the patient considered his condition to be so different from his conception of disease that he regarded his symptoms as a personal peculiarity which he was ashamed to mention. He was afraid that if he spoke of his fears or his obsessions his sanity might be questioned. This concealment and deception might be practised with some success because, although it incapacitated the person for work and enjoyment, the sufferer was usually able to present a normal appearance to the world. It was therefore not always lack of skill on the part of the physician which was responsible for his failure to diagnose a neurotic condition, but the complexity of the illness and the fear and repugnance with which afflictions of the mind were regarded by the sufferer. Dr. MacNiven's report showed that there were 538 patients in hospital on January 1st, 1934, and 543 on December 31st. The total number under treatment during the year was 722, and the average daily number resident, 542. There were 184 admissions with 179 discharges, including sixty-six recovered, fifty-five relieved, sixteen unimproved, and forty-two deaths.

Increase in Lunacy in the Highlands and Islands

In the annual report of Inverness District Asylum, issued by the Asylum Joint Committee, Dr. William M'William, medical superintendent of the institution, states that during the year 1933–4 the admissions to the institution numbered 144 as compared with 156 in the previous year, while the average daily number resident had been 747 as against 752 in the previous year. As regards the causes, a hereditary predisposition had been traced in forty-six cases, while senility was the cause in thirty-one, and alcoholism in one only. In thirty-six cases there had been one or more previous attacks of mental disorder. The report comments especially upon the increase of lunacy in proportion to population in the Highlands of Scotland, and refers to the report of the General Board of Control for 1932 in regard to this matter. This latter report pointed out that the highland and insular region of Scotland, which was mainly rural and non-industrial, showed the greatest number of cases of mental disorder, whereas the industrial areas, such as Clydebank, Greenock, Port Glasgow, and Lanarkshire, showed the smallest numbers. The conditions of living in the Highlands and Islands were not high, and there was an absence of the excitement and artificial conditions associated with urban life, so that the cause of the high rate of insanity in this district had to be looked for in other directions. Dr. M'William considers that an explanation may be found in the memorandum of evidence submitted by the Scottish Committee of the British Medical Association to the Departmental Committee on Health Services in Scotland, where it was pointed out that although the physical health of the people had been ameliorated by better housing and medical and nursing services, the mental health did not seem to have been so far ameliorated. The latter memorandum suggested that depopulation had drained the Highlands and Islands of much good stock, leaving behind weaker and older people who were unable to stand up to the strain of daily life on the sea coast or among the hills. Nothing had been done to preserve the fine type of people, mentally and physically, which the Highlands and Islands had hitherto possessed and produced.

Edinburgh Hospital for Women and Children

At the annual meeting of the Edinburgh Hospital and Dispensary for Women and Children, and of the Elsie Inglis Memorial Maternity Hospital, which was held on February 26th, Lady Ruth Balfour, who presided, referred to a special appeal which had been issued for the new ante-natal building at the Elsie Inglis Hospital and which had secured over £1,000 from 2,000 persons approached in the matter, A further sum, amounting to £1,166, had been raised by the Edinburgh Women Citizens' Association. This hospital already did a great amount of ante-natal and post-natal work, and during the past year it had again established a record for its low mortality. Since 1925 they had been analysing 10,852 consecutive cases of childbirth, delivered either in the hospital or in the district attached to it. From 1925 to 1929 there had been 4,031 deliveries with a total morbidity, including both fatal cases and patients showing a raised temperature, of 9.2 per cent. Later a special technique had been adopted, and during the following three years out of 3,779 births the morbidity had been 3.8 per cent. In the following two years, 1933 and 1934, with 3,042 births, the morbidity had been only 2.9 per cent. The mortality in the first period had been twenty-seven, in the next twelve, and in the third period ten. With regard to Bruntsfield Hospital for Women, 758 cases of all kinds, surgical and medical, had been admitted during the year. Dr. Mary M'Nicol said that the Bruntsfield Hospital and the Elsie Inglis Hospital were complements of one another, and she asked that in paying special attention to the Elsie Inglis Hospital subscribers would not forget the Bruntsfield Hospital, which attained the fiftieth anniversary of its existence in the present year.

The annual conversazione of the University of London Medical Graduates' Society was held at British Industries House on February 28th, when the president, Mr. McAdam Eccles, received the guests. After tea the members were conducted round the medical section, and, later, films (lent by Kodak Ltd.) were shown by Mr. McAdam Eccles, Miss Turner, and Dr. Guy Bousfield. The president proposed a hearty vote of thanks to the Medical Advisory Council. This was carried with acclamation, and Dr. Alfred Cox replied.

Reports of Societies

THE STOMACH IN RELATION TO PERNICIOUS ANAEMIA

PROFESSOR MEULENGRACHT'S LECTURE

At the meeting of the Section of Medicine of the Royal Society of Medicine on February 26th, with Sir FARQUHAR BUZZARD in the chair, a lecture was delivered by Professor E. MEULENGRACHT of Copenhagen on the stomach, especially the pyloric glands, in relation to pernicious anaemia.

Professor Meulengracht first paid a tribute to the work of Addison, of William Hunter, and of Hurst and Wilkinson and their collaborators, who had given a distinctively British stamp to the work on pernicious anaemia. When he and his fellow workers in Copenhagen began their investigations into the anti-anaemic principle in the stomach, which they assumed to be an enzyme not identical with pepsin and rennin, they addressed themselves first to its localization and studied the histological topography of the hog stomach. There were three regions of the stomach to be considered—the fundus or corpus, and the pyloric and cardiac regions. The glands in the fundus differed distinctly in cellular structure from those in the other regions, but between the so-called cardiac glands and the pyloric glands there was considerable similarity. Experimental preparations had been made from the tissues of the three regions and their respective effectiveness tested on patients with pernicious anaemia. Wedge-shaped areas well within the boundaries of each of the three regions were taken for this purpose, and the material was dried at low temperatures, defatted, and polarized. It appeared from the investigation that pepsin, rennin, and hydrochloric acid were produced by the glands of the fundus region, the ferment-producing activity of the other regions being slight ; thus the fundus gland region must be regarded as a unit with a function differing from the rest of the stomach. In a number of clinical experiments on patients with pernicious anaemia it was shown, as indicated by the reticulocyte count, that the fundus or peptic glands did not secrete the anti-anaemic factor, but that pylorus gland preparations were active to a striking degree. As for the so-called cardiac glands, which in the human stomach were reduced to a small rudimentary area a few millimetres wide near the cardiac orifice, the experiments were more difficult to interpret, but they appeared to have a certain anti-anaemic activity, though slight as compared with the pyloric glands ; in fact, the results corresponded to what happened when insufficient dosage was given. The key to the difference undoubtedly lay in histological differences. The cardiac and pyloric gland cells were identical in appearance, but the regions differed widely in volume of gland substance, and on that account the effectiveness of the cardiac fraction was only from one-half to one-fifth that of the pyloric fraction.

It seemed well, Professor Meulengracht continued, to include in the investigation the glands in the duodenum which histologically very closely resembled the pyloric glands, differing, apparently, merely in the underlying muscularis mucosae. As the pylorus was approached in the hog stomach the glands became more voluminous and lay in more lobulated fashion in the lower part of the mucosa. In the immediate vicinity of the pylorus the glands began to disappear below the muscularis mucosae, and very soon lay entirely under it. Actually the cells of Brunner's glands in the duodenum were indistinguishable from those of the pyloric glands. The volume of Brunner's glands was greatest just below the pylorus, and then became less, although in increasingly sporadic fashion these glands extended for three metres along the intestine. With the duodenum gland preparation a marked effect on anaemia was noted. He had only two clinical experiments to bring before the audience, but just before he left Copenhagen two other patients had been placed on the preparation and had reacted in the most striking way. Whether the anti-anaemic factor in the duodenum was associated with the intestinal epithelium or with the Brunner glands was an unsettled question, but the anatomical similarity between the pyloric glands and the Brunner glands made it most probable that it was an effect of the glands, and it might be assumed that they all belonged to the same glandular system, which in the pig extended from the cardiac region to the pylorus, and from there to the duodenum and small intestine.

From a physiological point of view these experiments gave to the pyloric glands a function it had hitherto been difficult to ascribe to them. It now seemed evident that the glands were the base of a special secretory function, secreting a substance essential to the blood and the nervous system. These glands in the hog stomach had a remarkable distribution. Presumably there was a corresponding functional identity in other animals, but the distributions were different. In man opinions differed as to how far into the duodenum and small intestine the Brunner glands continued, but they appeared to extend a considerable distance, becoming more and more sporadic. If these experiments were regarded from the point of view of pernicious anaemia in man they localized the disease anatomically. It seemed probable that pernicious anaemia was caused by a certain atrophy of the secretory activity of the stomach—namely, that comprising the pyloric gland region. There was an analogy in the failure of a certain pancreatic activity leading to diabetes. The work opened up the possibility of understanding why every case of gastric atrophy with anacidity did not lead to pernicious anaemia, because there was a reserve in the duodenum to maintain function. It also pointed the way of the manufacture of more effective—and therefore more pleasant, inasmuch as smaller quantities could be used—therapeutic preparations of hog stomach, a possibility which had been already exploited with success in preparations made from the pyloric gland fraction of the stomach, with the adjacent part of the duodenum.

DISCUSSION

Dr. A. F. HURST said that authors of books on physiology would soon have to realize that their chapters on the stomach would have to be rewritten, because the stomach must now be regarded as having two entirely different functions—a digestive function, which was not very important, because digestion could proceed without it, and the much more important function of secreting something necessary for the production of blood and for the nutrition of the central nervous system. It had not hitherto been clear why complete gastrectomy did not invariably lead to pernicious anaemia. He knew two patients who had gastrectomy done over eight years ago and had never taken any liver or stomach extract and were perfectly well, with no anaemia at all. The reason was that the cells which secreted the intrinsic substance extended into the duodenum. The theory also explained those rare cases of pernicious anaemia with free hydrochloric acid. There the body of the stomach was not being affected by gastritis to the same extent as the rest, whereas at the pyloric end extreme atrophy had taken place, leading to the destruction of the anti-anaemic principle. It further explained those cases which occasionally occurred spontaneously, but much more frequently as the result of the treatment of gastritis, in which hydrochloric acid returned. He had himself seen three such cases, and six or seven others had been recorded. In one of his three cases and in one recorded case there was a complete cure of the pernicious anaemia, and the patient required no more liver ; in the others, although the acid and pepsin came back, the entirely different cells which secreted the intrinsic substance did not recover, so that although these patients had normal gastric juice, they still required liver or stomach extract in order to be kept well.

Dr. J. F. WILKINSON referred to the frequency with which pernicious anaemia was associated with indigestion, flatulence, glossitis, diarrhoea, and constipation. He had no doubt whatever that these gastro-intestinal symptoms were due, not to the anaemia itself, but to other gastric deficiency. It was very necessary on discovering patients

with achlorhydria or hypochlorhydria to keep an eye on them in order, if possible, to prevent the onset of pernicious anaemia. Out of 628 cases of pernicious anaemia he had seen only about three with free acid; in others which had free acid and in which there was supposed to be pernicious anaemia, the anaemia proved to be of a different type. Recent correspondence on the mortality of pernicious anaemia had left a suggestion that the treatment, after all, was not as good as was thought. Statisticians—through no fault of their own—were grossly out of contact with clinical facts. For example, in some of the lists of pernicious anaemia mortality there appeared cases of children. Actually he had never seen a case of pernicious anaemia in a patient under 22, and only one case under 25. During the last six years he had collected 628 cases of pernicious anaemia, of which 441 were on stomach preparation, nearly all the remainder being on liver (parenteral). The secret of keeping these people well was to keep one's hand on treatment. In connexion with the Department of Clinical Investigation and Research of Manchester University and the Royal Infirmary, where these cases had been studied, a daily clinic was run, all the people under treatment came up every fortnight, and a blood count was done at least once a month. During the six years the results of treatment with desiccated hog stomach in these 441 cases showed that 408 remained well, fifteen had relapsed, four had died from anaemia, and fourteen had died from other causes. They all started on 1 oz. a day of hog stomach, and when the blood count went back to normal this was reduced. A dosage of 10 grams per million reduction in the red cell count was sometimes recommended; that was all right for patients with very low counts, but it did not suffice for those nearer the normal level.

Dr. L. J. WITTS said that it struck him that the connexion between achylia and subacute degeneration might be much closer than the connexion between achylia and megalocytic anaemia. In anaemias of the megalocytic type in which the gastric secretion was normal, such as tropical nutritional anaemia, subacute combined degeneration did not occur, and there seemed to be a similar link between achylia and disturbance of the bile pigment metabolism. Yet the jaundice so characteristic of pernicious anaemia was not seen in megalocytic anaemias which were of nutritional or intestinal origin. In idiopathic hypochromic anaemia the achylia might be almost as absolute as in pernicious anaemia, and special tests might discover a considerable deficiency in the secretion of the haemopoietic ferment of the stomach, but in his experience very few of such patients developed Addison's anaemia. Pernicious anaemia was not dependent on gastric defect alone. This explained why, although achlorhydria was so prevalent in the later years of life, pernicious anaemia was not a common disease. It had lately seemed to him that the work on anaemia was coming to a deadlock for lack of more quantitative data. It was necessary to measure the quantity of liver principle in the tissues after death, or possibly in the secretions during life, but the work had been held up by the slowness of progress on the biochemical side, and therefore he welcomed the present meeting, which had given a new lead to work on Addison's anaemia.

Dr. C. C. UNGLEY said that many cases of Addison's anaemia showed some degree of haemopoietic response to large doses of yeast given by the mouth, and this appeared a possible method of indicating the presence of the extrinsic factor in the gastric juice. He also discussed the evidence for the possible existence of a separate neural factor.

In the course of some brief further discussion Dr. JANET VAUGHAN suggested that the haemopoietic activity of Brunner's glands might explain the higher incidence of pernicious anaemia following gastric operations, which included occlusion of the duodenum. Dr. F. PARKES WEBER mentioned a case of the pernicious anaemia type with no diminution of hydrochloric acid, but which did not respond, as it should have done on Professor Meulengracht's hypothesis, to ordinary doses of liver extract with iron; improvement was brought about, but only by enormous doses.

INFLUENZA IN MAN AND ANIMALS

In the Section of Comparative Medicine of the Royal Society of Medicine on February 27th, with Professor J. BUXTON in the chair, a discussion took place on "Influenza in Man and Animals."

Dr. C. H. ANDREWES said that influenza in man was difficult to diagnose clinically with any certainty. Possibly the term included at least two different things—epidemic influenza and sporadic influenza occurring between epidemics. The latter was probably not an entity. A virus pathogenic for ferrets and mice had been recovered from cases of epidemic influenza, but so far not from sporadic cases. Influenza in animals was also an elastic term. Swine influenza has definitely been shown to be related to human influenza. The name "horse influenza" had been widely used, but there was as yet no evidence that the disease was related to influenza in man or in the pig. To apply the term influenza to other diseases of the respiratory tract of animals without good justification would lead to unnecessary confusion. The viruses of swine and human influenza produced identical symptoms in ferrets and mice; but they were distinct immunologically. In ferrets they caused fever, nasal catarrh, and obstruction when inoculated intranasally. If the inoculation was made under anaesthesia pneumonia usually followed. In mice, too, lung lesions were produced when the virus was inoculated intranasally under anaesthesia. To produce swine influenza in pigs the combined action of the virus and a bacillus (*Haemophilus influenzae suis*) was necessary. The virus alone caused the complete disease picture in ferrets and mice. After an infection with the virus ferrets recovered, were immune to reinfection, and developed neutralizing antibodies in their serum. Their immunity soon waned, and six months after infection they were susceptible to reinfection; nevertheless they still had antibodies in their serum. Ferrets inoculated with virus subcutaneously developed no obvious illness, and were later found susceptible to intranasal infection; but they, too, were found to have developed antibodies in their serum. The lack of correspondence between immunity and presence of antibodies in these two instances was being studied further.

Dr. J. T. EDWARDS said that research work into influenza had taken shape at last as a problem in practical pathology. The workers at the National Institute of Medical Research, Hampstead, had been fortunate enough to discover that the ferret contracted disease when it was inoculated—but only when inoculated by the intranasal route—with the nasal washings of human influenzal patients. The lesions of the ferret disease disclosed no bacteria as likely causal agents. The disease was readily transmissible by means of filtrates. So far the natural host—namely, man—of what was presumed to be the virus thus transmitted to the ferret had not been infected with material derived from ferret disease. This work might well have reached an impasse were it not that concurrently a disease of pigs well known in America as swine influenza was under investigation by Shope at the Rockefeller Institute (Department of Animal Pathology). It had been shown that the pig disease was a composite infection, with a filter-passing virus as its primary exciting agent, which by itself produced only a mild disease; symptoms corresponding in severity with those of the natural disease could only be set up when the virus acted in concert with the bacterium *Haemophilus influenzae suis*. The speaker then went on to relate an interesting chapter in the work on horse influenza, beginning with a series of reports published in an obscure veterinary journal in Germany just before the war on a common respiratory disease in horses which had caused very heavy losses in the German Army. The disease was well known to British veterinary surgeons as equine infectious pneumonia, but it bore more points of resemblance to human influenza than did the other common form of equine infectious respiratory disease, the so-called "pink eye" of British and American veterinary surgeons, to which the name "influenza" was customarily allocated. Equine infectious pneumonia came to the notice of the clinician only when the disease had reached the stage of frank pneu-

monia ; it was less rapid in its spread than " pink eye," but the very high death rate associated with it made it a disease of great economic importance. After narrating some more recent observations on this subject, the speaker suggested that at this stage in the progress of influenza research it was appropriate to take under review the important findings of these German official investigations, which had been sponsored by Koch, Gaffky, and Loeffler, in the light of new aspects of the problem undertaken by the Hampstead workers. It was possibly over-sanguine at this stage to express the hope that means were probably now forthcoming for the protection of the human subject, but the work of the Hampstead team had shown that ample virus could be obtained from ferrets for any system of immunization of the kind envisaged.

Dr. E. W. GOODALL expressed disappointment at not having heard more on the general question of the relation of influenza in animals to influenza in man. He did not think one need necessarily look for the same symptoms to be produced by the virus of influenza in the animal as in the human subject. An analogy might be furnished by small-pox, which was represented in certain animals by a local disease, vaccinia. Was there any local disease in animals which would on investigation prove to have some immune body showing it to represent an infection with the human influenza virus?

Dr. TOM HARE said that there was need for research into swine respiratory infections in this country by the thorough methods which were employed at Hampstead. Some of the outbreaks described as swine erysipelas or swine plague left one very dissatisfied with the diagnosis from the point of view of morbid anatomy, and from his own observations he had satisfied himself that some of the outbreaks of pneumonia in swine in this country were due to something other than the swine erysipelas bacillus or the Pasteurella, which was sometimes incidentally associated with a streptococcus.

Dr. WILSON SMITH, in some further description of the work at Hampstead, said that in the ferret for a long time no traces of any lesion were found except in the nasal mucosa, and it always puzzled him why, if the influenza virus was confined to the nasal mucosa, human subjects of influenza should be so ill with the condition and suffer such prostrating after-effects. The possible explanation was that in human beings the virus was not confined to the nasal mucosa and the sinuses there. It would be interesting to learn whether careful clinical examination would reveal, in quite uncomplicated cases of influenza, and apart from any secondary bacterial invasion, some involvement of the lung. Dr. E. STOLKIND said that influenza in man was called by many names, and often it was difficult to say what was the cause, but very frequently it was mixed up with some other disease. One form of typhoid fever had an influenzal aspect. In its beginning it was like the respiratory form of influenza.

Dr. ANDREWES, in the course of his reply, mentioned that definite lesions of the nasal sinuses were found in ferrets. Their turbinate bones had congestion, and acute inflammation, even going on to necrosis, was observed in the mucous membrane.

PUERPERAL PERITONITIS

A meeting of the North of England Obstetrical and Gynaecological Society was held at the University, Sheffield, on February 22nd, with the president, Mr. A. GOUGH, in the chair. Mr. J. W. A. HUNTER read a paper on " Peritonitis as a Complication of Labour."

Mr. Hunter recorded two cases, both showing the insidious mode of onset of the peritoneal infection. The first case was that of a primipara, aged 32, who had been in labour thirty-six hours, with premature rupture of the membranes, and presented the signs and symptoms of an acute abdomen. She died twenty hours after delivery, and at necropsy general peritonitis, with widespread filmy adhesions, was shown. The appendix and uterus appeared normal, and there was no apparent cause for the peritonitis. No attempt was made to isolate the organism. The second case was that of a 3-para in whom rupture of the membranes occurred at the thirty-seventh week of pregnancy. There was intense abdominal pain with vomiting. The patient was toxic. There was rigidity and tenderness of the abdomen, most marked on the right side. A diagnosis was made of acute appendicitis, and at laparotomy, performed ten hours after the commencement of labour, the abdomen was found to contain thin sero-purulent fluid. The abdominal organs showed evidence of peritonitis. The appendix appeared to be normal. Cultures made from the drainage tube subsequently demonstrated the presence of *Staphylococcus aureus*. The speaker discussed the possible sources of the infection, and wondered whether the onset of peritonitis brought on labour or whether the reverse was true.

Mr. J. E. STACEY thought that Mr. Hunter had not made out a case for peritonitis, as the organism should have been isolated earlier. Mr. C. G. PAINE agreed with Mr. Stacey, and suggested that the source of infection was either through the blood stream or following primary infection of the liquor and spread via the Fallopian tubes. Professor W. GOUGH thought that the *S. aureus* was a blood-borne organism, and that the *B. coli* came through the wall of the inflamed bowel as a secondary infection.

Professor W. GOUGH described a case of puerperal peritonitis. This followed a normal delivery, and the patient died. At necropsy pockets of pus were found collected in the abdomen. Cultures from the patient's own throat, cervix, the placental site, peritoneum, and from the blood all revealed the presence of a haemolytic streptococcus. A week prior to admission the patient's husband had been in bed with a septic throat, and two nurses who attended to her during her stay in hospital had haemolytic streptococci in their throats.

Dr. A. A. GEMMELL described a case of repeated stillbirths, and asked for suggestions to assist this patient in carrying a live child to term. She had been pregnant five times, and no live child was delivered. Two of the pregnancies ended before viability, and the other three were stillborn. Examination of the blood and urine showed no abnormality, both during and apart from pregnancy, except for some deficiency of the anterior pituitary hormone in the urine. The husband's Wassermann reaction was also negative. Messrs. STACEY, MALPAS, WALSH, and PAINE discussed this case and advised antispecific treatment in spite of the negative Wassermann.

Dr. W. D. GALLOWAY described the case of a suppurating subperitoneal myoma causing acute abdominal symptoms, and showed the specimen. It was from a nulliparous woman, aged 62, with acute abdominal pain, vomiting, and rise of temperature and pulse rate. The mass was felt extending from the left costal margin to the left anterior superior spine. Subtotal hysterectomy was performed, and a large fibroid, distended with pus, was removed. The patient made a complete recovery.

Mr. PERCY MALPAS described a case of pregnancy following a massive intrauterine dose of radium, and said that the occurrence of pregnancy after a fairly recent application of radium raised the question of what was the minimal castration dose, and also what was the effect upon the foetus of preconceptional irradiation. The literature dealt mainly with animal experiments, and the observations on human beings were inconclusive. The present patient was aged 39, and had 1,700 mg.-hours of radium applied for menorrhagia. There was a period of amenorrhoea for three months, after which cyclical bleeding commenced for five days in every twenty-one days. Seven months after irradiation the patient was definitely pregnant, and subsequent examination of the products of conception did not reveal any foetal or placental abnormality. The action of radium was discussed, and the authorities from the literature quoted.

Haematometra

Professor MILES PHILLIPS demonstrated a specimen of post-climacteric haematometra, associated with cervical fibroid. The haematometra (7 by 5 by 4 cm.) was associated with a cervical fibroid (10 by 8 by 8 cm.). The latter stretched and compressed the atrophic cervical canal. The uterine wall was only 1 to 3 mm. thick. Its mucous membrane was thinned almost to extinction and free from any new growth. A few small haemorrhagic

areas seemed to be the only possible sources of the effused blood. The whole uterus had been removed, with the atrophic ovaries, from a spinster 69 years of age a few days after a severe loss of blood from the vagina. Twelve days before this there had been a slight loss, otherwise there had been no discharge of any sort, nor any pain whatsoever. Menstruation had ceased at 44 years. The clinical diagnosis had been carcinoma of the corpus accompanying an old cervical fibroid. A good recovery followed.

The PRESIDENT said that there were two problems about this tumour: (1) the cause of the bleeding, and (2) why the blood did not escape. He suggested that the cervical canal was closed. Professor W. GOUGH quoted a case of a woman of 45 who had so much intra-abdominal bleeding that she resembled a ruptured ectopic. He had not seen many cases of fibroids giving trouble after the menopause. Mr. J. ST. GEORGE WILSON asked whether the thinning out of the uterus had occurred in the fifteen days, whether the fibroid had developed after the menopause, whether the blood in the haematometra had collected after the menopause, and also whether Professor Phillips had looked for a carcinoma. Dr. A. A. GEMMELL referred to a case of haematometra which had occurred some ten years after the menopause, with no apparent cause.

Uretero-vaginal Fistula

The PRESIDENT described a case of uretero-vaginal fistula, and demonstrated a new method of implanting the ureter into the bladder. A small rubber catheter was tied into the lower end of the ureter and attached to a silver catheter, which had been previously left in the bladder. As the silver catheter was withdrawn the ureter entered the bladder and the rubber catheter protruded through the urethra. This was left in until it came away. A self-retaining catheter was left in after the operation to drain the bladder of the urine coming from the opposite kidney.

FAT METABOLISM IN DIABETES

At a meeting of the Manchester Medical Society on February 6th, with the president, Dr. E. BOSDIN LEECH, in the chair, Dr. T. H. OLIVER read a paper on "Fat Metabolism in Diabetes."

The striking abnormality, Dr. Oliver said, was the presence of ketosis, and this was usually explained by the failure of carbohydrates to burn up the fats. Did clinical experience suggest that this was invariably the case? The high fat diet of Newburgh and Marsh did not increase ketosis, and the speaker had found that in certain cases of diabetics on the verge of coma the ketosis disappeared when they were fed on fat alone. On the other hand, it was found that the blood sugar took longer to return to normal when they were fed on these diets. Occasionally in patients without diabetes it was impossible to obtain a ketogenic reaction, however much fat was given. This was found to occur also in certain cases of diabetes under treatment for a complicating pyelitis—that is, there was a failure to produce ketosis in persons in whom carbohydrate combustion was deficient, and in whom, therefore, ketosis would seem to be especially liable to develop. On the other hand, the elderly obese diabetic rarely developed ketosis, and it appeared only when metabolism was stimulated by a complicating infection. Ketosis was often seen in patients with little stored fat, in youthful diabetics, in hyperthyroidism, in hyperemesis, and in cyclical vomiting; thus it occurred in cases where the ductless glands and metabolism were most active. This suggested that the mobilization of fat was the important factor. Experimentally it had been shown that an injection of anterior pituitary extract would produce ketosis in normal dogs, and probably excessive production rather than diminished utilization is the cause. Efforts to produce the ketogenic reaction often failed in sterile women, which suggested that in them there was a defective ductless gland system. In diabetics two types of obesity were found. In one there was a history of increased obesity prior to the onset of symptoms; these cases reacted well to insulin, and were undoubtedly pancreatic. In the other type there was a history of a long-continued obesity before the onset of diabetic symptoms; these cases often failed to react or reacted only partially to insulin, and the termination was usually from cardio-vascular disease rather than from coma. In this type it was probable that the pancreas was only partially at fault, and the primary lesion was a failure of utilization by the tissues, since insulin reactions do not occur after muscular exertion.

Dinitrophenol for Obesity

Dr. C. S. D. DON, in a paper on "The Treatment of Obesity by Sodium Dinitrophenol," mentioned the fatalities which had followed the use of dinitrophenol, two being due to overdoses of the drug, although in one case the patient died while having a normal dosage. The speaker then dealt with the unpleasant reactions which might be seen at times even in patients who were on a normal dosage. These included a rash and swelling of the body, itching, sweating, agranulocytosis, and disorders of taste. He had treated thirty-six cases of obesity with sodium dinitrophenol; the dosage was smaller than that used by American writers, being 1 mg. of the drug per pound of body weight, with a maximum of 250 mg. per day. It was stopped for one week in every six weeks. Five patients developed itching and a rash, but in no case was this severe, and in every case it disappeared when the drug was stopped. In no case was there any severe reaction of any kind. Of the thirty-six patients treated six were also dieted, but the remainder were told not to alter their diet. Eleven patients lost weight, in some cases as much as 30 lb., but these eleven patients included the six who were on diet; the greatest losses of weight were observed in these. Eleven cases were considered to be failures, either because of an unsatisfactory loss of weight or because of skin rashes. In the remaining fourteen cases the weight lost varied from 4 lb. to 8 lb. The average time during which the drug was given was four months, the shortest time being under one week and the longest thirteen months. In some cases the metabolic rate was estimated, and increases of metabolism varying from +20 per cent. to even as high as +70 per cent. were observed. The pulse rate gave no indication of the height of the metabolic rate. In only one case was a metabolic rate above +40 per cent. observed. In conclusion, Dr. Don expressed the opinion that the drug was disappointing, and in view of the severe reactions, and even deaths, which had been reported in the literature, he was doubtful whether it should be used in any case. He felt that it might be of value in a patient who refused to diet.

CHEST SURGERY

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, held on February 22nd, with the president, Mr. SETON PRINGLE, in the chair, Mr. H. MORRISTON DAVIES read a paper on some aspects of the surgical treatment of pulmonary tuberculosis and bronchiectasis.

Mr. Morriston Davies dealt first with the indications for surgical intervention, dividing these into indications of necessity, of which the chief was haemorrhage, and indications of choice. Surgery was often the most rapid method of restoring a patient's wage-earning capacity. Passing to the various forms of collapse therapy, he discussed the value of artificial pneumothorax, phrenic nerve interruption, apicolysis, and thoracoplasty. In certain cases it was better to carry out a temporary phrenic paralysis before inducing artificial pneumothorax. In performing total thoracoplasty, he preferred to start with the upper ribs, and occasionally removed the first rib completely. Lantern slides of numerous radiograms illustrating the results of collapse therapy were shown, and the address concluded with a description of the modern single-stage lobectomy operation for unilobar bronchiectasis.

Mr. R. ATKINSON STONEY said that the closest co-operation between physician, surgeon, anaesthetist, and radiologist was absolutely necessary. Every case must be assessed on its own merits, the condition of the patient, his surroundings and psychology, as well as the condition of his lung, being taken into consideration. Mr. HENRY

STOKES said that in the matter of chest surgery Dublin was not sufficiently advanced to enable them fully to criticize a paper such as they had heard. Dr. E. T. FREEMAN felt that every tuberculous lesion was an economic question, as much as a medical or a surgical one. Since the introduction of artificial pneumothorax the results had greatly improved. He mentioned the improvement that frequently followed in radiation bronchiectasis.

Dr. GEOFFREY BEWLEY spoke of the difficulty of adhesions. A great many of these were situated over the fourth rib in the post-axillary line, and tended to keep cavities open. He thought that the division or enucleation of adhesions was of the greatest importance, and if this were done in every case the more radical methods of collapse would be unnecessary. Dr. V. M. SYNGE thought that the treatment of pulmonary tuberculosis was really a matter for one who was a combined physician and surgeon. The important thing for the general practitioner was how to diagnose the disease: the treatment should be left to experts. It was useless for a patient to go to a sanatorium, have a pneumothorax, and, when improved, have to go back to one room in a tenement, under the conditions which had already led to the disease.

CORRESPONDENCE

The number of letters received for publication is so large that we must ask correspondents to make their points briefly and to regard 600 words as the upper limit of length.

Opportunities in Medical Psychology

SIR,—There can be few of your readers who do not hear the statement frequently made that all the special branches of the profession are in danger of becoming overcrowded. We should like to point out that there is at least one specialty—and that of the greatest importance—in which there are increasing opportunities and far too few men and women to take them. Your readers may have noticed, as we have, with satisfaction, that quite recently there have been a number of posts advertised in your columns in connexion with psychotherapeutic work: the Maudsley Hospital, the Cassel Hospital, and now the Institute of Medical Psychology offer salaried work to competent psychotherapists. This tendency is greatly to be welcomed, but we take the opportunity of pointing out how many openings there are for adequately trained medical psychologists in private practice and in connexion with the new local authorities' clinics in various parts of the country, and how much need there is for such practitioners in many provincial areas; indeed, in London itself there is room for more specialists in this branch of medicine.

Successful psychotherapy demands the best medical qualifications, character, and personality, and for such important work we need many of the more able of the younger men and women who are entering the profession. Courses such as those provided by the Institute of Medical Psychology afford adequate training for the man or woman who is already well qualified in general medicine, and we should like to see such a demand for these courses that the provision of similar facilities in other medical centres in the country becomes a necessity.

We hope, Sir, that our letter may catch the attention of those who, having had experience of resident posts in general hospitals, are now deciding to which branch of medicine they will devote their energies, as well as that of some of those who have already gained insight into the treatment of the psychoses.—We are, etc.,

E. FARQUHAR BUZZARD.
W. LANGDON BROWN.

March 1st.

Chest Hospitals and Clinics

SIR,—Dr. W. S. Gilmour, in the *Journal* of February 16th (p. 328) refers to Dr. Heaf's conclusion about the very small number of cases suitable for plastic thoracic surgery, and then remarks that "cases in other European countries have a different manifestation of the disease, and a different psychology: their solution of the problem is not ours." It would be of interest to have facts to substantiate this statement. Eighteen months' contact with tuberculosis work in Western European countries leads me to doubt whether slight differences which may exist in this way are really significant. The assumption of your correspondent is rather dangerous, for it may be used to justify an attitude of inaction with regard to methods used in other countries involving administrative or other difficulties.

A marked difference, however, does exist in the general outlook on tuberculosis. Here it appears to be mainly an administrative problem: on the Continent it is a clinical one. The general physician and paediatrician are keenly interested in tuberculosis as a disease worthy of study as well as of treatment and prevention. Nearly every general hospital in Scandinavian countries has a well-developed tuberculosis department, with beds, surgical facilities, and men in charge who have had much general medical as well as tuberculosis experience. This arrangement is facilitated by the fact that all hospitals are municipal, and money for treating all patients comes from the same source. Physicians attached to these institutions deal with much more clinical material than here, spend half of each day in the hospital, and receive an adequate salary for their services. I feel that the question raised by Dr. Heaf with regard to the surgical treatment of pulmonary tuberculosis points merely in one way to the need for a wide outlook in the reorganization of the anti-tuberculosis campaign.

Two final points: (1) the word "tuberculosis" rarely appears in the naming of dispensaries in Western Europe; and (2) a deliberate and successful attempt is being made in some centres (for example, in Amsterdam and Stockholm) to create in waiting and examination rooms a homely atmosphere, widely different from that of the ordinary out-patient department.—I am, etc.,

G. GREGORY KAYNE.

London, S.W.7, March 2nd.

Treatment of Bronchiectasis

SIR,—In a letter on the treatment of bronchiectasis in your issue of February 16th (p. 329) Dr. James Adam refers to his success with hourly inversion for this complaint. Whilst one is glad to note that he has sufficiently appreciated the benefit of "intermittent inverted postural drainage" to wish to increase that benefit in a progressive and rational, though necessarily uncomfortable, manner, the "continuous postural drainage" method recently elaborated and described by Mr. H. P. Nelson in the *Journal* (1934, ii, 251) seems to have escaped his notice.

The whole subject of the medical treatment of bronchiectasis needs revision in the light of recent study of the bronchial tree made possible by two-stage opaque bronchography, and the Nelson posture-bed constitutes the greatest single advance of recent years in the conservative treatment of this disease. Indeed, being logical, it bids fair to oust all other forms of medical treatment in much the same manner as the extirpation operations are steadily replacing the methods of collapse therapy formerly practised surgically. The bed is so devised that any posture necessary for the drainage of a particular diseased area can be adopted continuously with the minimum of discomfort to the patient. In all cases, and more especially

those seriously ill with the disease, the more irksome postures must be assumed gradually, the headaches and backaches of the first few days giving way to a relative comfort so greatly appreciated by the patient that he is sometimes loath to abandon his position even for the few hours of exercise necessary during the day. The sputum, it is found, increases for the first few days, thereafter progressively diminishing, until in the most favourable cases a mere trace is produced in the twenty-four hours. At the stage of maximum improvement the patient may proceed to reduce the daily duration of his treatment, and, again in favourable cases, may resume his occupation by day, merely sleeping in the correct position at night.

Like the other forms of medical treatment this method is not curative, but merely palliative, as one would expect from the nature of the disease. Nevertheless, it is steadily finding favour at the Brompton Hospital not only as a medical measure but also as a useful preliminary, in cases with much sputum, to surgical removal of the diseased area. I am, etc.,

Brompton Hospital, Feb. 25th. G. S. ERWIN.

Reactions following Gold Injections

SIR,—I was interested to read the letter of Drs. Hartfall and Garland in the *Journal* of February 9th on the reactions following gold injections, and support their statement "that small weekly doses of gold salts given by the intravenous route have not been followed by any serious reactions." I give below the analysis of about 118 cases of pulmonary tuberculosis treated in the King Edward VII Sanatorium, Bhowali, U.P., India. I am afraid I have to give these figures from memory, as the records are not available to me at this place.

Preparation Used	Number of Cases Treated	Remarks
Sanocrysin (intravenous) ...	70	Two cases had high continued pyrexia
Solganol oleosum (B), intramuscular	40	No severe reaction followed
Sanocrysin oleosum, intramuscular	8	One very severe dermatitis

It will be seen from the above that among seventy cases of pulmonary tuberculosis treated with sanocrysin there were two incidents where high continued fever followed the injection. The fever continued for a week and a half in each case. Recovery from this complication was complete in each. In both instances this reaction followed after 0.5 gram or a higher dose of sanocrysin had been given. In other cases there was no severe reaction. In a number of them, however, albumin appeared in the urine, and the treatment was given up.

Solganol oleosum (B) was used in forty cases. There were no severe reactions, but albuminuria appeared in some, which necessitated the cessation of the treatment. In the eight cases treated with sanocrysin oleosum there were no severe reactions in seven. In one case, after the 0.5 gram dose had been repeated once, there was severe dermatitis, with albumin in the urine and very severe pruritus. The treatment carried out in this case was intravenous administration of sodium thiosulphate, with a saline purge in the morning, and farinaceous diet. Many local applications were used for the relief of pruritus, but none was found of any avail. However, it was noticed that complete omission of sodium chloride from the meals had a beneficial effect on the skin lesions as well as the pruritus. The results of treatment with sanocrysin (intravenous) and with other gold salts given intramuscularly were about the same.

In many parts of the world, and especially on the Continent, the intravenous gold salts are now little used: the oily preparations are mostly employed, one of the reasons being that intravenous gold salts are likely to provoke severe reactions. Whilst the comparative therapeutic value of intravenous gold salts and intramuscular gold salts is an open question with me, I maintain that sanocrysin (intravenous), with care and experience, is as free or full of reactions as the oily preparations of gold, and would further mention that the intravenous route of administration of gold salts has the following features to recommend its use: (*a*) it is painless; (*b*) I surmise that collection of medicament in intramuscular injections at the site of injection is possible, and thus in subsequent injections overdosage may occur; (*c*) through the intravenous route medicament can be quickly administered in urgent cases.—I am, etc.,

Istituto Carlo Forlanini, Rome, Feb. 18th. R. N. TANDON.

Pulmonectomy

SIR,—I am pleased that Dr. W. S. Dickie has recalled the case operated upon by Sir William Macewen as long ago as 1895. No reference was made in my short note in the *Journal* of February 16th because it was only a preliminary report of the two cases, and there was little, if any, similarity between the operative measures involved. There is no desire to belittle the "brilliant success" achieved so long ago, and it must be left to others to judge, either from Dr. Dickie's letter or from Macewen's original account of his case, whether it can be considered as a deliberate pulmonectomy even in a not "very narrow technical sense." Sauerbruch and his pupils, including Nissen, with real international generosity and to their own disadvantage, refer to Macewen's as the first pulmonectomy. Haight, however, in an exhaustive review of the subject, points out that the case in question cannot be included within the modern conception of the term.—I am, etc.,

Newcastle-upon-Tyne, March 3rd. GEORGE A. MASON.

Diagnosis of Early Pulmonary Tuberculosis

SIR,—In connexion with the communications of Dr. Burton Wood (February 16th, p. 294) and Dr. Lachlan Grant (March 2nd, p. 446), stressing the importance of repeated sputum examination for the diagnosis of early pulmonary tuberculosis, I would like to recall to notice a short paper of my own, on "Early Detection of Tubercle Bacilli in Sputum: Practical Methods of Obtaining Satisfactory Specimens."[1] Among the various methods detailed in it one of the most useful is that of inducing a cough by the sniffing of the vapour of volatile mustard oil from the neck of a six-ounce bottle, at the bottom of which there is about half an ounce of the oil. Two or three sniffs generally result in a good cough and the expulsion (with a little encouragement) of the ejecta from the larynx and trachea into the basin. This procedure has often given a positive result when previous examinations had proved negative.—I am, etc.,

London, N.W.1, March 5th. JAMES DUNDAS-GRANT.

SIR,—Dr. Burton Wood's article in the *Journal* of February 16th (p. 294) ought to prove useful to many who have been taught to rely on physical signs before having their suspicions aroused. There is no doubt that

[1] *British Medical Journal*, April 14th, 1928.

absence of these signs, and, indeed, often of any complaint of illness on the part of the patient, does not exclude the possibility of tuberculosis being present.

Dr. Lachlan Grant (March 2nd, p. 446) mentions the thermometer, which he thinks is of great service in the early detection of the disease. I heartily agree with him. A patient with no physical signs, no complaint of feeling ill, and yet a more or less constant rise of temperature is usually a case of early tuberculosis. Cough, of course, is usually present.

Given a complaint of persistent cough for a week or two, a more or less persistent temperature, and a patient who does not feel ill, I think a sputum test and *x*-ray examination should be done at the earliest opportunity. —I am, etc.,

Pitsea, Essex, March 2nd. D. MACLEOD GRAY.

Sterility and Ovarian Dysfunction

SIR,—I have read with very great interest the paper on sterility due to ovarian dysfunction by Mr. T. N. A. Jeffcoate (*Journal*, February 23rd, p. 345). I take this opportunity of offering him my congratulations on a most valuable piece of work on an aspect of gynaecology which is too little appreciated. I have been particularly interested in this subject since October, 1933, when I undertook, as a British Medical Association Research Scholar, studies on the endometrium in cases of sterility.

Mr. Jeffcoate points out that in his series of sterility cases endometrium was examined in forty-two instances only, and that of these only twenty-one of the women were in the premenstrual or menstrual time of the cycle. He rightly states that his numbers are too small to give an estimate as to the frequency of anovular menstruation. It is a like consideration which has been responsible for my not publishing the results of my own researches, which to date have involved examination of endometrium in some seventy cases of primary sterility. In almost all of the cases I have removed endometrium during the premenstrual stage of the cycle. My findings are similar to those of Mr. Jeffcoate, and I most certainly agree with him in the view that anovular menstruation is a relatively common cause of sterility.

In order to gain some idea of the duration of anovulatory menstruation I have followed up ten untreated cases of sterility over a period of fourteen months (which I hope to extend). Endometrium has been removed at monthly intervals during the premenstruum. I have seen little change in the premenstrual endometrium in these few cases. Most of the other patients have had from two to six specimens of endometrium removed at intervals. It was quite obvious when one began these studies that one could not readily curette a woman at frequent intervals. Apart from the patient's merited objections to the procedure, it is possible that the normal endometrial cycle might be disturbed and the portion removed give an inaccurate picture relative to the time in the cycle. Therefore the method of suction described by Burch and Klingler was adopted. I have since modified the method for my own convenience, and find little difficulty in removing sufficient material from an unanaesthetized out-patient to allow an opinion as to whether the "secretory" premenstrual phase is occurring or not. The electro-aspirator, such as is used in laryngology, may be employed, and also obviates the necessity for curettage. In almost all of my cases, at the first examination under anaesthesia, when tubal insufflation was performed, light curettage was done for diagnostic purposes. I believe that Mr. Jeffcoate is correct when he states that "the risk attending light diagnostic curettage is so slight as to be completely overshadowed by the valuable information derived from the procedure." I have seen no ill effects resulting from light curettage or from removal of endometrium by suction in out-patients beyond an occasional complaint of feeling of faintness in the latter.

That dilatation of the cervix is of value in many cases of sterility cannot be disputed, but the *raison d'être* is not so apparent. My impression is that it is due not so much to relieving cervical stenosis or distortion as to altering a disordered rhythm or reflexly inducing ovulation. The effect may be analogous to that of coitus or artificial stimulation of the cervix in the rabbit inducing ovulation.—I am, etc.,

Royal Samaritan Hospital for Women, Glasgow, Feb. 25th. ALBERT SHARMAN.

The Climacteric

SIR,—I have read with much interest and profit Dr. Whittingdale's paper on the climacteric, in the *Journal* of February 9th, and I thought his description of it as "a smouldering fire of the endocrines" particularly apt. I was very glad he referred to the rather cursory manner in which the subject is dismissed in most textbooks, and my excuse for writing is to express the hope that this may perhaps be remedied in future editions. I venture to suggest, not without reason, that there is too much uncertainty as to the kind of symptoms which may reasonably be attributed to the menopause, with the result that the patient sometimes fails to obtain the help she needs far more than any drug—namely, reassurance.

Every intelligent woman knows she may expect certain temporary disabilities at this age, and goes to her doctor not necessarily to be cured, but simply to find out whether there is any cause for anxiety. In the minds of the laity (but not only of the laity) the symptoms of the climacteric are "hot flushes" and emotional instability, but a doctor should be in a position to assure a patient who is free from these, but frightened because she has begun to suffer from attacks of vertigo (perhaps the most alarming of all), tachycardia, or sleeplessness, that there is nothing unusual in such symptoms at her age. One of the best descriptions of the climacteric I have read is given in Kelly's *Gynaecology*, where the symptoms mentioned include: vertigo, faintness, vicarious forms of bleeding, insomnia, paroxysmal tachycardia, digestive disturbances—a sufficiently sinister series of symptoms if there were no physiological explanation for them.

I was sorry that for mist. pot. brom. et valerian Dr. Whittingdale implied faint praise, for in my experience this is an invaluable mixture for the menopause, and the best routine treatment I know, despite the brilliant results sometimes obtained from ovarian therapy. I fully agree with him as to the important part adequate education and a purpose in life play in mitigating the symptoms. I suppose that is why modern woman seems, on the whole, to suffer far less at this time than did her grandmother. —I am, etc.,

London, W.1, Feb. 28th. MARGARET BASDEN.

Scurvy during Treatment for Gastric Ulcer

SIR,—I was interested in the note by Dr. Barling in the *Journal* of February 23rd (p. 358) on the occurrence of scurvy during the dietetic treatment of gastric ulcer. I am glad that he has drawn attention to a condition that is probably not uncommon. Within the last two years I have seen two cases of scurvy associated with

long-standing severe dietetic restrictions, not, however, in these instances for gastric ulcer.

The most instructive case occurred in a man, aged about 35 (I write from memory), who had been undergoing orthopaedic treatment at the David Lewis Northern Hospital, Liverpool, for a tuberculous spine. I had occasion to see him in hospital because he complained of vague discomfort after food. Investigations revealed nothing of an organic nature in the gastro-intestinal tract, and he was treated as a case of atonic dyspepsia. He was a man with definite views about his diet, as many chronic invalids are apt to be, and he regulated what he ate very carefully; fruits, for example, were anathema to him—they always upset him. He was transferred to a nearby convalescent home, and I lost sight of him for about nine months. I was then again asked to see him in hospital, because he was reported to have developed a "rash." The latter proved to be petechial haemorrhages scattered over both legs from feet to thighs; there were no ecchymoses. I inquired why he had been readmitted to hospital, and was told that he was to see the visiting dentist, as he had developed "pyorrhoea." On examination of the mouth the diagnosis became clear: the gums were typically hypertrophic, spongy, and bled easily. During his period of convalescence the patient had adhered to his sloppy carbohydrate diet, without fruit or green vegetables, and which persuasion had failed to make him relinquish. The mouth changes had preceded the appearance of the rash by some weeks. He was otherwise fairly well, and no haemorrhages were discovered elsewhere. He was at once treated with orange juice in large quantities (despite his objections), and within a fortnight the gums and legs were normal.

The second case was in a male, aged about 50, admitted to the David Lewis Northern Hospital, Liverpool, as a case of purpura haemorrhagica. He had large areas of ecchymoses and petechiae around both knees and ankles; the mouth was normal, the patient being edentulous. I think the important point in the history was that he had been on a diet for "colitis" for many months, and, as is the custom with many "colitis" diets, it was very deficient in fruits and green vegetables. He had never previously had a similar rash or excessive bleedings under the skin, etc. The blood count did not throw much light on the case, the platelet count being indeterminate. On a diet adequate in fruits the haemorrhages disappeared within a few weeks. His "colitis," I should mention, was not a very definite affair at all.

I would suggest that scurvy is not quite so rare nowadays as is usually taught. It is a condition, like many others, which, if not ever-present in the mind of the clinician, is apt to remain undiagnosed or relegated to the limbo of the "purpuras." The wretched inadequacies of diet existing in the families of the unemployed are responsible for most examples seen. I have met with three cases in elderly undernourished paupers within the last two years, and they must be much commoner in the large municipal hospitals. Another group of scurvy would appear to be due to extremes of faddism on the part of the patient; and we, as a medical profession, would appear to be responsible for a third group, perhaps more often than we imagine.—I am, etc.,

Liverpool, March 2nd. RONALD ELLIS.

Diphtheria Immunization

SIR,—I have pleasure in giving Dr. Guy Bousfield the following two illustrations of the results obtained by me from two injections of diphtheria prophylactic T.A.F. given at an interval of four weeks. I quote first from my article, "Diphtheria Immunization in a School" (*British Medical Journal*, November 10th, 1934, p. 855):

"I did not retest the Schick-positives until October 31st, 1933—that is, almost eight months after their second injection of T.A.F.—when eighty-five of the ninety-seven original Schick-positive pupils were retested and with one exception found negative; the one exception gave a faint positive reaction. These results were in harmony with the clinical findings, as none of the original Schick-positives developed diphtheria after they had received two injections of T.A.F."

The second quotation is from page 46 of my annual report for 1932:

"In another test group fifty Schick-positives were each given 1 c.cm. T.A.F. twice at four weeks' interval, and were retested six months after the second injection. Of the fifty, only one remained Schick-positive."

The T.A.F. employed at both schools was a Burroughs Wellcome preparation. At the first school the Schick procedures were instituted at the onset of an outbreak of clinical diphtheria and diphtheria carrierism. At the second school no clinical diphtheria had occurred for many years, and no diphtheria carriers have been discovered. I have no personal records of carefully controlled groups of 1-year-old infants given two T.A.F. inoculations with prior and subsequent Schick tests.

My experience is that two injections of British T.A.F. at an interval of four weeks or longer give not only 90 but almost 100 per cent. of Schick-positive children an active immunity corresponding to the Schick-negative level as judged by a subsequent Schick test made about six months later. I tell parents that the two inoculations of T.A.F. will cause at least 90 per cent. of the children to develop long-lasting immunity to clinical diphtheria of any severity—a different matter from making Schick-positives give one negative posterior Schick reading—because, bearing in mind the history of vaccination against small-pox, I think it politic both to understate the efficiency of diphtheria immunization and to keep the Schick procedures as simple and painless as possible.

May I reiterate my recommendation that, until T.A.F. is superseded by a more efficient and equally innocuous diphtheria prophylactic, every child should receive two injections of 1 c.cm. T.A.F. at an interval of four weeks or longer about the age of 1 year, and another single injection of 1 c.cm. T.A.F. about the age of 5. Of over 2,000 children whom I have given two T.A.F. inoculations during the past three years not one has subsequently developed diphtheria within my districts. During the same period several children whose parents had refused me permission to inoculate them did develop diphtheria, and one died. Though these figures are too small to be of serious statistical value, they favour the belief in the efficiency of two T.A.F. injections.

Like Dr. Bousfield I regard Mr. Noel Waterfield's percentage of local reactions, detected three days after A.P.T., as a warning against the use of the latter (*British Medical Journal*, February 9th, p. 276). I have under daily observation this week twenty-three Schick-positive schoolgirls to whom I gave 1 c.cm. Evans Sons Lescher and Webb A.P.T. subcutaneously over the left deltoid; this site, which I use with impunity for my intramuscular injections of T.A.F., is not recommended by the manufacturers of A.P.T. Twenty of the twenty-three have given very definite local reactions—red, very tender, indurated areas of one to three inches in diameter. Most, but by no means all, of the local reactions were at their height on the third day, and are diminishing by the fourth day. I make this premature reference to this little investigation only to strengthen Dr. Bousfield's necessary warning against the premature wide use of A.P.T. "one-shot" diphtheria prophylaxis. The claim that the new alum-precipitate diphtheria prophylactics now being advertised in Great Britain are relatively free from liability to cause undesirable local reactions requires carefully controlled scrutiny.—I am, etc.,

WILLIAM G. PATTERSON, M.D.,
Weybridge, Feb. 23rd. M.R.C.P., D.P.H.

Hypertrophic Stenosis of the Pylorus

SIR,—I am reluctant to add to your correspondence on this subject, but Professor Crymble (February 23rd, p. 388) raises points of such interest that I feel constrained to do so.

We must all be at pains to distinguish clearly between "pylorospasm" on the one hand and true hypertrophic stenosis on the other, since to operate on a case of "pylorospasm" can only be regarded as a serious error. The differential diagnosis is often difficult, since the symptoms presented by both conditions may be identical. Visible gastric peristalsis cannot be regarded as an infallible diagnostic sign, being in some degree common to both. But the feeling of a pyloric "tumour" is decisive. In "pylorospasm" no such "tumour" is ever present, and if in such a case the abdomen be unwittingly opened, no thickening of the pyloric canal can be detected, and the "usual muscle-dividing operation" is not practicable, as I know, because in these unfortunate circumstances I have attempted it! Now admittedly the detection of the "pyloric tumour" by palpation may be difficult, especially in the younger infants, but with due care and patience I believe it to be possible almost invariably. The youngest case in my own series was successfully operated upon on the tenth day of life, and I was able to feel the "tumour" and make an accurate diagnosis on the preceding day—the ninth. I would therefore respectfully submit that the feeling of the "tumour" must always remain the most important piece of diagnostic evidence.

In regard to pathology, if observations at operation on the "pathology of the living" teach one anything it is that the hypertrophic process in the pyloric canal passes through an evolutionary cycle, the broad phases of which can be recognized in infants operated on at various ages. Up to about the fourth week of life we see the earliest phase. At operation the "tumour" feels relatively small and flaccid, and on incision the muscle, which is not unduly thick, is found to be soft and vascular, and on this account the operation tends to have an untidy look. This is, I think, the type of case to which Professor Crymble refers in his letter, and undoubtedly at this stage pre-operative palpation of the "tumour" is difficult, mainly because the pylorus is only likely to be palpable if it is in a condition of systolic contraction, as when a vomit is impending. Patience, and even repeated examinations, may be necessary before one succeeds in recognizing it.

Later, in infants from about the fourth to the ninth week, the hypertrophic process appears to have attained its maximum development. At operation we find the large hard "tumour" referred to by Professor Crymble, and on incision the muscle is very thick, cuts smoothly and cleanly, and is pale and avascular. The operation is bloodless, neat, and tidy. Later still, in infants from about the ninth or tenth week onwards, the hypertrophic muscle is manifestly resolving in the direction of natural cure. At operation the "tumour," though it may still be large, feels softer and more ill defined, and on incision the muscle cuts with some difficulty and may bleed quite freely.

After all, it is manifest that some such evolution must take place in the hypertrophic pyloric canal, and the crucial question is, What is the stimulus to which this remarkable hypertrophy is the response? We may be willing to accept the thesis elaborated by Cameron, which explains it as a compensatory effort on the part of the propulsive circular fibres to overcome an inability of the dilator longitudinal fibres to function properly; but, as Professor Crymble truly indicates, we are in need of further knowledge of the nature of the neuro-muscular incoordination which is primarily responsible. When we know more of the origins of such aberrations of function it may well be that surgery will play no further part in the treatment of hypertrophic stenosis of the pylorus, nor in that of the various analogous disorders of the alimentary and urinary tracts.—I am, etc.,

London, W.1, Feb. 26th. T. TWISTINGTON HIGGINS.

SIR,—I was glad to see two such authorities as Mr. Twistington Higgins and Dr. F. J. Poynton emphasizing the importance of feeling the tumour before making a diagnosis of hypertrophic stenosis of the pylorus. The technique of examination is a most important matter, and one which I feel cannot be too greatly stressed. I would recommend the following method.

The infant is in bed and turned towards its right side. The examiner sits on a chair behind the child, with a bottle containing a two-ounce glucose feed in the right hand. The left hand, which has been well warmed, is placed under the bedclothes with the fingers lying over the right half of the abdomen. The child is then given the bottle, and palpation can be carried out by flexing the fingers. If performed gently the child will continue to suck, and examination may be continued throughout the feed. The tumour is most readily felt by rolling it gently against the right side of the spine. In true cases, as the stomach fills, the peristaltic waves can be felt under the hand, and by lifting the bedclothes for a moment they can be seen when most prominent, thus avoiding prolonged exposure of the child.

I have used this method in the examination of fifty cases, subsequently proved at operation, and have never failed to feel the tumour after examining through one or, at the most, two feeds.—I am, etc.,

Brighton, March 2nd. R. KEMBALL PRICE.

Recovery after Complete Stoppage of the Heart

SIR,—Attempts at resuscitation must have been made by the majority of practising surgeons with varying measure of success. It would appear that a completely successful issue is rarely attained. In the course of surgical practice lasting some twenty years I can instance only one case in which the patient survived and suffered no ill effects.

A man, aged 65, was admitted to the Cancer Hospital in October, 1920, with inoperable carcinoma of the floor of the mouth. The local condition progressed, causing such discomfort that a "toilet" operation was decided upon. On January 5th, 1921, he was anaesthetized by Dr. Henry Robinson with a view to fulguration of the growth by means of diathermy. The operation had scarcely begun when respiration ceased and no pulse could be felt. Artificial respiration was begun and 1/60 grain strychnine injected. No cardiac response occurred, so the abdomen was opened through the left rectus, the diaphragm incised, and the pericardial sac opened to permit direct access to the heart, which was quite flaccid and inert. Flickering irregular incomplete contractions could soon be felt. These tended to wane when direct stimulation with the fingers was interrupted. Contractions became stronger and more regular until normal rhythm and fullness of pulse were restored. The notes state that this stage was reached fifteen minutes after the initial failure. The abdomen was closed in the usual way; no attempt was made to suture the diaphragm. The operation was continued and completed. No untoward effects were noticed or complained of, and the patient was discharged on February 3rd. He was admitted again on April 14th, and died on June 19th. No post-mortem examination was made.

In other cases when effects of stimulation have been checked by direct palpation the results obtained with

adrenaline fully bear out the contention made by Mr. Ledlie in favour of that drug as a stimulant to induce the cardiac muscle to contract.—I am, etc.,

London, W.1, Feb. 27th. PERCIVAL P. COLE.

SIR,—In view of the recent interesting correspondence regarding recovery after complete stoppage of the heart, I think the following two cases may be instructive.

Case 1.—A collier, aged 41, suffered from symptoms resembling Dietl's crises due to ureteric kinking and right-sided nephroptosis. Appendicectomy had been performed elsewhere under local anaesthesia for the same symptoms eight months previously. During induction of anaesthesia with a 1 : 2 chloroform-ether mixture the patient collapsed; respiration and cardiac impulse ceased almost simultaneously. I was called to the anaesthetic room, and, having ascertained immediately that the heart had stopped beating, gave an intracardiac injection of adrenaline and performed subdiaphragmatic cardiac massage. In making the midline incision for this purpose the liver was incised rather deeply, but did not bleed. Intratracheal oxygen and artificial respiration were given, coramine and alpha-lobeline were injected without effect for about two minutes; a second intracardiac injection of adrenaline was administered, and after further massage the heart restarted in another minute or so. Artificial respiration had to be continued for about five minutes before spontaneous respiration occurred. During suture of the wound with through-and-through silkworm-gut troublesome haemorrhage occurred from the cut liver, which was arrested with a muscle graft and sutures. The patient had a prolonged spasm of a tetanic nature an hour later lasting for about ten minutes; he gradually recovered consciousness six hours later, but for nearly a week was strange in manner and semi-delirious at times. He was discharged to a convalescent home in one month, with the wound healed, but remained neurasthenic. From January, 1934, when the incident occurred, until July he was bed-ridden, and, from being a hard-working intelligent man, had become a total nervous wreck. A large ventral epigastric hernia had developed and served to remind him continuously of the ordeal through which he had passed and of which he had been informed by a sympathetic friend. I saw him at his house and persuaded him to have his hernia repaired under local anaesthesia, thinking that the abolition of this disability might restore his confidence. This repair was done under novocain after prolonged preliminary premedication and rectal paraldehyde on July 10th, 1934. His condition rapidly improved, both physically and mentally, and after a month at a convalescent home, during which he gained 20 lb. in weight, he resumed his work in October. He returned to me on January 28th, asking for the repair of a small ventral hernia at the side of the xiphisternum, which gave him some pain and served to remind him of his experience. This was again done under local anaesthesia and oral sodium soneryl, and he has been discharged apparently fit and well with no evidence of his former neurasthenia.

Case 2.—A married woman, aged 40, was admitted on June 17th, 1934, suffering from cholecystitis and gall-stones. After allowing for resolution she was operated on by me on July 6th. After induction with ethyl chloride and ether the anaesthetic was continued by intranasal ether from a Shipway apparatus connected to an oxygen cylinder. A fairly easy cholecystectomy and choledochotomy had been done and appendicectomy was in progress when the patient, who had given no cause for alarm, stopped breathing and the pulse ceased almost simultaneously. The anaesthetic had been administered for about thirty-five minutes at this time. Lobeline and carbon dioxide were given and subdiaphragmatic cardiac massage with intracardiac adrenaline were immediately resorted to, and after about one and a half minutes the heart restarted. Artificial respiration was continued for another five minutes before breathing occurred naturally, and the appendicectomy was rapidly completed and the wound closed. On return to bed the temperature was 97°, pulse 120, respirations 24, and her condition appeared good. One and a half hours later she developed a generalized tetanic spasm with some opisthotonos and cyanosis. The airway was clear, but oxygen and morphine were given. This spasm lasted for nearly an hour, and was unaffected by an intravenous injection of calcium chloride and hypodermic parathormone; the temperature had risen to 101.8°, pulse 140, respirations 36. After relaxation for fifteen minutes a similar spasm occurred, and these were repeated with increasing severity for seven hours; the patient was unconscious and breathing was rapid and deep in the intervals. A lumbar puncture revealed some increase in pressure in the interval between spasms, but the fluid showed no abnormality. Blood sugar examination was normal and the urine was clear. The patient remained comatose, and the reflexes, which during the first few hours had been exaggerated with a positive Babinski sign, became absent. Her colour and pulse remained good, and after twelve hours she flinched after strong pressure had been made on the supra-orbital nerve. Salines were administered, but after twenty-four hours she became more deeply unconscious and died thirty-six hours after the operation. A necropsy showed some congestion of the whole cerebral cortex, but, apart from this, no abnormality was discovered.

The nervous symptoms in these two cases appear to show that the short stoppage of the circulation had some degenerative effect upon the cells of the cerebral cortex; in the first case there was only one short convulsion, followed by prolonged neurasthenia in a man who had previously shown no neurasthenic symptoms; in the second case, however, the convulsions were severe, and the patient died in coma. I have wondered if the convulsions were due to the direct effect of the ischaemia on the brain or whether some alteration in the blood chemistry might have contributed. Calcium and glucose were given empirically without effect, and I should welcome some opinion regarding these phenomena.—I am, etc.,

G. F. LANGLEY, CH.M., F.R.C.S.
Blackburn, Feb. 16th. Resident Surgical Officer, Royal Infirmary, Blackburn.

Endoscopic Resection of the Prostate

SIR,—Several questions have been raised following our article (*Journal*, January 26th) on this subject. Some have already been dealt with in the text, and require no further comment; may we reply briefly to the others? First, with regard to resection in more than one stage, we find that in the first 120 cases fourteen large adenomatous prostates and one malignant required more than one session for a satisfactory anatomical result. These were pioneer attempts, in which it was deemed advisable in the interests of safety to remove too little rather than too much tissue, and this figure is much higher than would be the case in the next 120 resections (vide Mr. Millin's letter, February 16th, p. 330).

The description of Mr. Power's patient (February 2nd, p. 226) is of great interest. We have not seen such a condition in which lateral lobes have been "pedicled" following resection, and indeed it is difficult to understand how it occurred. The action of the vesical musculature in the different types of bladder-neck obstruction has not yet been adequately explained, but from our observation on these post-resection patients we would emphasize the fact that, "if a cone-shaped exit from the bladder has been produced by the removal of the posterior commissure, middle lobe, or bar flush with the trigone, and by undercutting the lateral lobes when present, assuming bladder tone to be normal, micturition will be normal."

The anaesthesia we condemned for this work was ordinary spinal anaesthesia to the level of the tenth thoracic segment. To avoid its dangers we concentrated on the method of caudal block, which gives satisfactory analgesia in about 90 per cent. of cases. We have had to use it in only 130 patients in genito-urinary work, and in this small series have noticed temporary ill effects on five occasions. One patient had generalized convulsions lasting four minutes, due probably to the injection of some of the novocain into a vein, while four had some

degree of collapse and mental aberration during the course of the operation. Low spinal anaesthesia, produced by the injection of 0.6 c.cm. of 10 per cent. stovaine, with the patient sitting up, used for several years in rectal work, was first brought to our notice as a routine for endoscopic resection in April of last year at a meeting of the Urological Section of the Royal Society of Medicine, and since then we have employed it on a dozen patients for various urological manœuvres—resection, lithotrity, etc.—with every satisfaction. We were reluctant, however, to advocate its use, as our experience of it up till then was limited. In our hands we have always regarded caudal-block anaesthesia as being completely safe, though at times a little tedious, and considered reported failures and mishaps to be due to inexperience, carelessness, or anatomical peculiarities; but in view of Mr. Dickson Wright's (February 16th, p. 330) personal knowledge of two deaths during its use, it may be that eventually the low spinal anaesthesia will be employed to the exclusion of caudal block.—We are, etc.,

GEORGE Y. FEGGETTER.
R. W. DOYLE.

Newcastle-upon-Tyne, Feb. 27th.

Iodine Burns

SIR,—Dr. McNair Aitken, in his interesting account of "Iodine Burn" in the *Journal* of February 23rd, makes somewhat ungallant comment upon the lady teacher's knowledge of first-aid treatment of a bruise. Not only is the iodine line followed in school ambulance equipment, but it has for many years been taught in first-aid classes, so that every now and again children come to my clinics with typical old-time "erysipelas," caused by iodine, more especially when combined with bathing of the part with hot water under the direction of highly trained ambulance men and women. Similarly, with one's motor driver's licence an enclosed pamphlet issued by the Automobile Association confirms the free use of iodine, although there are better substances always at hand. Attention is not drawn to the fact that in time the tincture may decompose, with liberation of iodic acid, and produce acute dermatitis quite apart from any idiosyncrasy. Iodine, I believe, is wholly unnecessary as a first-aid application.—I am, etc.,

J. M. MORRIS, M.O.H.

Neath, Feb. 26th.

Treatment of Hallux Valgus and Rigidus

SIR,—Mr. S. W. Daw's letter in your issue of March 2nd (p. 446) sounds the old battle-cry. Once again we may expect a flood of pontifical announcements on the merits of the two principal operations for hallux valgus. Unanimity on this point is lacking, even among orthopaedic surgeons. Brought up in the metatarsal school, I was well satisfied with the faith until I met the phalangeal schism, and therewith perplexity. I knew that I could obtain good results with the first method, but was assured that better results followed the second. It therefore seemed justifiable to let the patient decide, and, preferably, to decide without knowing anything at all about it.

I have performed the two operations upon seventeen cases of bilateral hallux valgus, and hope shortly to publish the results, which I may here anticipate in part. Some months after operation the patients were asked to say which of the following three statements accurately described their conditions: (1) both toes are equally comfortable; (2) the right is more comfortable than the left; (3) the left is more comfortable than the right. They did not know that the operation differed on the two sides, and their judgement (unlike that of Paris) was by feeling and not by seeing, for the badge of success is the relief of pain.

The results are so far as follows: for the phalangeal operation, seven; for the metatarsal, five; and for both sides equally comfortable, five—a verdict of thirty-four toes. Surely this little utterance of the great body of the silent operated only goes to show what some of us had already suspected—namely, that so long as you shorten the bony pier sufficiently it does not matter very much how you do it.—I am, etc.,

ERIC I. LLOYD.

London, W.1, March 3rd.

Lead Poisoning

SIR,—In the Potteries in 1889 I saw several cases of lead poisoning which greatly interested me. Succeeding to a branch practice in County Durham at Easter, 1890, I found a suspicious case on the visiting list.

A dressmaker, aged 26, had complete double wrist-drop, complete paralysis of both deltoids and partial of biceps, but pectorals scarcely affected. The legs were weak rather than paralysed, and she could walk slowly. There was serious anaemia, and the blanched mucous membranes suggested haemoglobin 50 per cent. She complained of indigestion, which seemed to me to be flatulence from constipation and slight lead colic. This view explained also the anaemia and paralysis, and indicated mist. alba q.s. to effect a cure. My principal informed me that, as marriage was near when paralysis began about three months before, she saw a consultant, who diagnosed progressive paralysis, with bad prognosis, and marriage out of the question. Later on she saw another consultant, who named the paralysis, and said she would die within a year. Moreover, I was told there was no lead poisoning in the district, and no one had suggested it in her case. I admitted that there was no blue line.

Her lover and his mother, a widow, lived at the upper end of the village, and I found that he wished to marry the girl and take her to his mother's house, which was larger, and where she would be better attended to than at home. I saw no reason why he should not. In three months after marriage she looked much better, and in six the anaemia had gone; her complexion was good and the grey pallor quite gone. In fifteen months she engaged me to attend her first confinement, and she looked a healthy, happy woman, but her grasp was not quite normal yet. By this time I had sent to my principal six patients as suspect of plumbism, but he would have none of them till a brother of one of these had colic, anaemia, and blue line. This one and, soon after, two others were accepted as typical cases of lead poisoning. Still my seniors denied that there was any evidence of this in the dressmaker, though they admitted that their diagnosis had been wrong. However, I advised everyone in the village to reject the first pitcher of water each morning.

Within forty-eight hours the chief of the Water Board called to deny the prevalence of plumbism due to the water, because the same main supplied 70,000 persons outside our village of 3,000 inhabitants, and no lead poisoning had been reported for years. I offered to submit three cases for examination by a consultant with experience of plumbism. He accepted the offer, and asked for names and addresses of all suspects. I handed over my notebook, and left him for half an hour. On my return he congratulated me on having picked out almost every excessively long lead pipe in the village. The great majority of the houses were within the maximum permitted in the by-laws, and in these I had not found a single case. Consideration of the distribution of the twelve cases on my list convinced him that no consultation was necessary.

Then I outlined the case of the palsied woman, and asked if he could help to clear up the diagnosis. On referring to his plans he found that her home had the greatest length of lead piping in the village and that her husband's home was only six feet from the water main, so that marriage had removed her from a position of the greatest danger to one of the greatest safety.

Blue line is a valuable sign of lead absorption, but is often absent in cases of domestic origin. Punctate baso-

philia in the blood film, properly safeguarded, also means absorption, and is practically always present in plumbism. This advance in diagnosis is comparable to the Widal in atypical typhoid. In my experience plumbism is commoner than syphilis. Dr. Wilfred Harris (*British Medical Journal*, February 2nd) has proved that lead palsy is still missed. Nevertheless, as blue line, colic, and anaemia were absent, and as no palsy is pathognomonic of plumbism (not to mention the alternative diagnosis in his case) it was even more important to prove actual absorption than mere hazard of plumbism, which we should always assume to be omnipresent.—I am, etc.,

W. Ealing, March 1st. ROBERT CRAIK, M.D.

The Riddle of the Psychoses

SIR,—Dr. Kimber (February 23rd, p. 384) rather misses the point of my letter, which was not the therapeutic demerits of the mental hospitals but the unsuitability of the residential type of institution as a milieu of research. My point was that this isolates the patient (*a*) from his own environment (the possible cause of illness), and (*b*) from the doctor, who is supposed to be investigating "the riddle of the psychoses." Further, the psychotics who are most accessible to investigation and treatment will never seek the "asylum" of a psychiatric institute, nor could they reveal the secret of their troubles to a "team" of specialists.

Dr. Kimber's instructions to nurses seem to me admirable (if they were practicable); but they merely illustrate one of my points—namely, that under existing conditions the nurse, and not the doctor, establishes the only effective contact with the patient, whether for therapeutic or scientific purposes. Unless his psychologically trained nurses are to be charged with the solution of "the riddle of the psychoses," or unless he disputes my point *re* the collation of "reports" at second hand as being useless for research purposes, I cannot see why he mentions them at all.

If Dr. Kimber had troubled to understand the earlier letter of mine he refers to, he would have spared himself the arduous and (I think) ineffective effort to "think charitably" of my motives. I did not disapprove of clinics except as annexes and ante-rooms to the mental hospitals. Nor do I disapprove of the latter. I merely deprecate the official assumption that "the hospital" is the natural centre of the mental health service and of psychiatric research. I have to thank Dr. A. J. Brock for his support and for an exposition of my views so much more lucid than I could achieve myself.—I am, etc.,

London, W.C.1, Feb. 25th. IAN D. SUTTIE.

Adoption of Children

SIR,—We are anxious to bring the work of the National Children Adoption Association to the notice of members of the medical profession in the United Kingdom. It is felt that they must, from time to time, meet with cases in which the association could be of service to their patients. The association has, for instance, recently had two cases in each of which, a child having died at birth, the family doctor recommended that the mother should be provided with another immediately. In both cases the association was able to find a suitable child. The results have been highly satisfactory. Experience also shows that cases are of only too frequent occurrence in which it is not possible for a mother to keep her child, either through inability to maintain it or for other reasons.

The association is prepared to receive applications from would-be adopters requiring children, or from parents or guardians of children who need adoption. All applications are carefully examined by our small case committee, and are treated with the utmost confidence, the names of the applicants being communicated to this committee alone. No charge of any kind is made either to adopters or to parents or guardians. Pending adoption, children can be accommodated in the association's hostels at Tower Cressy, Campden Hill, and Castlebar, Sydenham Hill, at a small charge for maintenance, the amount of which varies with the financial position of the parents. In exceptional cases the charge is waived.

Full particulars and application forms can be obtained from the secretary, National Children Adoption Association, 71, Knightsbridge, S.W.1.—We are, etc.,

RHYS SAMSON,
Honorary Secretary, N.C.A.A.
ROBERT HUTCHISON,
London, Feb. 25th. Honorary Consulting Physician, N.C.A.A.

Training in Midwifery

SIR,—I imagine that most of your readers will be in sympathy with Dr. A. M. Claye (February 23rd, p. 387) in his complaint that the midwifery training of medical students suffers because a large proportion of pupil midwives who receive twenty cases each have no intention of practising. But the Central Midwives Board makes the rules.

Your correspondent is, however, incorrect, so far as my hospital is concerned, when he asserts that hospital authorities are not interested in the students' training because they make no contribution to the hospital funds, whereas a substantial profit is made out of the pupils. We receive £35 from a pupil entering for six months and £16 16s. from a student entering for one month, board and lodging being provided in each case. Our difficulty is that if we reduce the number of pupils we must engage staff nurses to take their place. Students coming to us for one month are guaranteed twenty deliveries.—I am, etc.,

RALPH B. CANNINGS,
Secretary, City of London Maternity Hospital.
London, E.C.1, Feb. 26th.

Prodigious Infants

SIR,—The note by Dr. W. F. Christie in the *Journal* of February 23rd (p. 373) on this subject makes it of interest to recall the strange case recorded by Maudsley in *The Physiology and Pathology of the Mind* (1867, p. 261). Discussing the occurrence of insanity in early life, he gives an account of a child which was "raving mad as soon as it was born." The narrative states that

"a woman, about 40 years old, of a full and plethoric habit of body, who constantly laughed and did the strangest things, but who, independently of these circumstances, enjoyed the very best health, was, on the 20th January, 1763, brought to bed, without any assistance, of a male child who was raving mad. When he was brought to our workhouse, which was on the 24th, he possessed so much strength in his legs and arms that four women could at times with difficulty restrain him. These paroxysms either ended in an uncontrollable fit of laughter, for which no evident reason could be observed, or else he tore in anger everything near him—clothes, linen, bed furniture, and even thread, when he could get hold of it. We durst not allow him to be alone, otherwise he would get on the benches and tables, and even attempt to climb up the walls. Afterwards, however, when he began to have teeth he died."

Truly a remarkable infant. Shall we ever look upon his like again?—I am, etc.,

London, W.1, Feb. 22nd. FREDERICK DILLON.

Curarine in Tetanus

SIR,—As a result of my letter published in the *British Medical Journal* of December 22nd, 1934, I have been in touch with four cases of severe tetanus in the last six weeks. Of these, two were suitable for treatment with curarine. I should like to bring the series up to about a dozen cases, and to this end I should welcome any opportunity of seeing any severe cases which may arise in the near future.—I am, etc.,

University Department of Pharmacology, Oxford, March 5th. RANYARD WEST.

"A Miracle of Healing"

SIR,—Apropos of the case described by Colonel Elliot last week (p. 447), I had twice previously examined a man whom the Press have recently proclaimed as cured of "blindness" by faith. This man had hysterical ptosis; he could see at any time by holding up his eyelids; and he has been "cured" on at least two previous occasions.—I am, etc.,

WILLIAM A. BREND,
Late Neurologist to the Ministry of Pensions.

London, S.W., March 5th.

Medico-Legal

JUDGEMENT AGAINST NURSING HOME RESTORED

In the House of Lords on February 28th an appeal by Mr. William Norman Powell and his wife was allowed against the decision of the Court of Appeal in November, 1933, in an action against the Streatham Manor Nursing Home. The Court of Appeal had upset the judgement of the court below, which judgement was ordered by the House of Lords to be restored. The action was for personal injury done to Mrs. Powell, a patient in the home, by the negligence, as alleged, of the respondent's servant, and Mr. Justice Horridge had expressed the view that the injury was caused by the negligence of the sister in using an instrument. The facts of the case were stated in the *British Medical Journal* of December 16th, 1933 (p. 1146). A sum of £977 damages was awarded Mr. Powell with costs, and £2,500 with costs was awarded to Mrs. Powell.

The Lord Chancellor, in giving judgement, said that at the trial the respondents had set up the case that the injury must have been done by the surgeon in performing the operation. This was at variance with the evidence of the patient, and the judge had accepted her evidence. The evidence given was of a very contradictory character, and no one could have been in as good a position as the judge of first instance who not only heard but saw the witnesses (as the Court of Appeal did not) to say where the truth lay. He quoted Lord Shaw as saying, in a case which reached the House of Lords in 1919, that "When a judge hears and sees witnesses and makes a conclusion or inference with regard to what is the weight or balance of their evidence, that judgement is entitled to great respect. . . . Witnesses without any conscious bias towards a conclusion might have, in their demeanour, in their manner, in their hesitation, in the nuance of their expression, in even the turn of the eyelid, left an impression upon the man who saw and heard them which can never be reproduced in the printed page." It was hardly possible, the Lord Chancellor continued, to conceive a better case than the present one, in which the judge of first instance had the advantage over the Court of Appeal in judging where the truth lay. There were contradictions on questions of fact between professional witnesses, and on expert evidence between witnesses called as to opinion. The Court of Appeal should be slow to upset the judgement arrived at by a judge who both saw and heard the persons giving evidence.

Assenting judgements were delivered by Lords Macmillan and Wright.

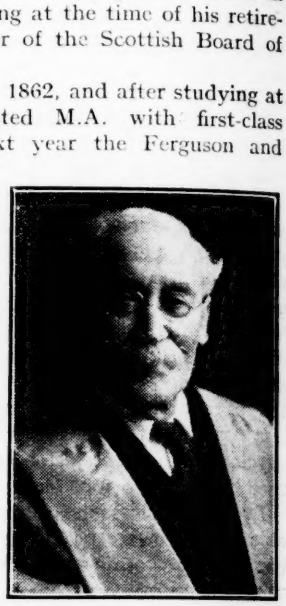
Obituary

SIR W. LESLIE MACKENZIE, M.D.

LL.D.Aberd., F.R.C.P.Ed.

The death took place on February 28th at his residence in Belgrave Place, Edinburgh, of Sir William Leslie Mackenzie, who had been in failing health for several years. Sir Leslie Mackenzie had a distinguished career in the Public Health Service, being at the time of his retirement in May, 1928, a member of the Scottish Board of Health.

He was born in Ross-shire in 1862, and after studying at Aberdeen University, graduated M.A. with first-class honours in 1883, gaining next year the Ferguson and Fullerton Scholarships in mental philosophy. Proceeding afterwards to Edinburgh University, he graduated M.B., C.M. with honours in 1888, and later became resident physician at the Aberdeen Royal Infirmary and subsequently assistant to the professor of physiology. In 1890 he took the Diploma in Public Health, and next year the certificate of the Medico-Psychological Society of Great Britain and Ireland. His career in the public health service began with a short period as assistant medical officer of health in Aberdeen, and he was in 1891 appointed the first medical officer of health for the counties of Kirkcudbright and Wigtown, where he had to organize the public health service under the Local Government (Scotland) Act, 1889. In 1894 he was transferred as medical officer of health to Leith, and did valuable service in connexion with the public health of this port. In 1895 he took the M.D. degree at Edinburgh, being awarded the highest honours, and in 1904 he joined the Royal College of Physicians of Edinburgh as a Member, proceeding to the Fellowship in 1909. He also became a Fellow of the Royal Society of Edinburgh. In 1901 he had been appointed medical inspector under the Local Government Board for Scotland, and from 1904 till 1917 he was a medical member of this Board, becoming later, when the name of the Board was changed, medical member of the Board of Health for Scotland until his retirement in 1928. The University of Aberdeen recognized his public services by conferring upon him the honorary degree of LL.D. in 1912, and a similar academic distinction was conferred upon him by the State University of Kentucky in 1928. He received the honour of knighthood in 1919, and in 1922 was appointed by the Crown one of the members of the General Medical Council.



Not only was Sir Leslie Mackenzie a highly efficient medical officer of health, but he rendered many signal services to this department of medicine in organizing the earlier stages of several movements which have later developed into important sections of the public health service. One of the earliest of these activities was when, soon after he had joined the Local Government Board, he was asked, along with Professor Hay of Aberdeen, to give evidence before the Royal Commission (Scotland) on Physical Training. The result of the Commission's report in 1903 was the establishment of the medical inspection of school children, a matter which Sir Leslie Mackenzie

had long advocated. His book, *The Medical Inspection of School Children*, published in collaboration with Dr. Edwin Matthew, was the first attempt to give form and substance to this recommendation, although the services in respect of school children were only properly co-ordinated about 1919, after the Education Act of 1918. The practical result of his ideas and recommendation has not only been the gathering of an immense amount of valuable information regarding the health and physique of growing children, but has afforded a foundation upon which rests the work that is now being done for the improvement of future generations. At a later stage, about 1906, he took a considerable part in placing the movement for dealing with tuberculosis on progressive administrative lines. At that time there was very little provision for the institutional treatment of this disease, while to-day the institutions in Scotland devoted to tuberculosis contain about 5,000 beds.

As a Highlander, Sir Leslie Mackenzie took a special interest in the provision of medical services for the Highlands and Islands of Scotland: largely as a result of his advocacy the Highlands and Islands (Medical Service) Board was formed, and upon this he served for several years as a member. As a result of careful administration, encouraged by Government grants, the Medical Service of the Highlands and Islands, which provides treatment under great difficulties for a small population scattered over a wide area where transport is often extremely difficult, has become a model of its kind. Sir Leslie Mackenzie's intimate connexion with this development was recognized when in 1928 he was invited to Kentucky, U.S.A., to inaugurate a new hospital and nursing service that had been provided for the mountainous areas of that State, modelled on the Highlands and Islands scheme of Scotland. The Scottish scheme has also been followed in similar developments instituted in Canada, Newfoundland, and South Africa. Another department of administrative medicine which owes a great deal to the forethought and planning of Sir Leslie Mackenzie is the child welfare and maternity service. In 1915 he was asked by the Carnegie Trustees to prepare a report on the health of Scottish mothers and children, at a time when no official organization for a service in regard to them existed in Britain. His report, *Scottish Mothers and Children*, published by the Carnegie Trust in 1917, gave his ideas upon the steps that should be taken in regard to the development of such a service.

Sir Leslie Mackenzie also took a great deal of interest in the question of housing, which he regarded as of immense importance not only in respect of the amelioration of general social conditions, but as having a direct influence on the improvement of health, and he served as a member of the Royal Commission on Housing known as the Ballantyne Commission. His own opinion was that the housing movement was the most important matter in which he had played an effective part.

In addition to the great amount of administrative work which he transacted, Sir Leslie had a facile pen, and he was a frequent writer of philosophical and medical articles in periodical publications. His early interest in philosophy was evidenced by his contribution of the section on the nervous system in Professor Bain's *Senses and Intellect*, fourth edition. His report on the examination of 600 school children for the Royal Commission on Physical Training has been mentioned, and was embodied later in his book upon this subject. He also issued works upon the *Health of the School Child* (London, 1906), *Health and Disease*, and *Problems of School Hygiene* (Edinburgh, 1914). When the British Medical Association met at Edinburgh in 1898 he served as honorary secretary of the Section of State Medicine. At the Manchester meeting in 1902 he was vice-president of the Section of Public Medicine, and at the Aberdeen meeting in 1914 vice-president of the Section of State Medicine and Medical Jurisprudence.

Sir Leslie Mackenzie is survived by his widow, to whom he was married in 1892; Lady Mackenzie is also well known as a social worker, having been for ten years a member of the Edinburgh School Board, as well as serving on numerous other public boards and being at present a member of the departmental committee which is investigating the health services of Scotland. The funeral service was held at the Edinburgh crematorium on March 2nd, and was largely attended by representatives from public bodies and the medical profession.

[The photograph reproduced is by Drummond Young, Edinburgh.]

HUGH EDWARD JONES, M.R.C.S.

Consulting Surgeon, Eye and Ear Infirmary, Liverpool

We regret to report the death of Mr. Hugh Edward Jones, who was well known in Lancashire and North Wales as an eye, ear, and throat specialist. From his medical student days at Guy's Hospital he had taken a keen interest in these subjects. He obtained the diploma M.R.C.S. in 1885, and the L.R.C.P. in the following year. He subsequently held the posts of clinical assistant in Guy's Hospital and also in the Royal London Ophthalmic Hospital, Moorfields. Until five years ago, when he retired, he had lived in Liverpool, and held many hospital appointments, including those of surgeon to the Eye and Ear Infirmary, the Royal Albert Edward Infirmary, Wigan, and St. Helens Hospital. He was also laryngologist to the North Wales Sanatorium. On his retirement he removed to Bangor, North Wales, where he became ophthalmic surgeon to the Caernarvonshire and Anglesey Infirmary. He designed the new ophthalmic department of that institution.

Mr. Jones became a member of the British Medical Association in 1894. In 1906 he was vice-president of the Section of Laryngology and Otology at the Annual Meeting in Toronto, and six years later was president of the Section of Otology at the Annual Meeting in Liverpool. He was also an ex-president of the Otological Section of the Royal Society of Medicine and of the North of England Ophthalmic Society, and a member of the Ophthalmological Society of London. He contributed various articles on his specialties to medical periodicals.

E. H. MONKS, L.R.C.P. & S.ED., J.P.

Consulting Surgeon, Wigan Infirmary

The death occurred on February 23rd at Southport, in his 75th year, of Dr. E. H. Monks, honorary consulting surgeon to the Wigan Infirmary, after an illness of some duration. Born at Wigan in 1860, Elisha Hodkinson Monks was educated at the Wigan Grammar School, Owens College, Manchester, and the College of Surgeons, Edinburgh, qualifying L.R.C.P. & S.Ed. and L.M. in 1881. He joined his father, the late Dr. J. Monks of Wigan, in 1884, and was in active practice up to his last illness. He was appointed honorary surgeon to the Wigan Infirmary in 1895, and on his retirement from the active staff in 1920, consulting surgeon. Continuing his association and keen interest in the institution, Dr. Monks was elected life vice-president in 1920, a trustee in 1926, and was chairman of the Board of Management from 1929 to 1933, and vice-chairman until his death. His interest in his profession did not end here. Dr. Monks was a very active member of the British Medical Association, and for many years represented Wigan at the Annual Meetings and went to the Winnipeg Meeting in 1930. He

was elected a member of the B.M.A. in July, 1898, and served as chairman of the Wigan Division from March, 1922, to May, 1929, during which difficult period he did yeoman service. He held the office of president of the Lancashire and Cheshire Branch in 1927–8. Dr. Monks was a great believer in social functions as a means to unity in the profession, and was an indefatigable worker to that end. Among other posts, he held that of police surgeon to the Wigan Borough Police and was honorary surgeon to the Wigan Rugby Football Club.

Dr. Monks took a prominent part in the public and social life of his native town. He was appointed a borough magistrate in 1900, and as a Ruling Councillor of the Lindsay Habitation of the Primrose League was a staunch supporter of the Conservative Party, and represented the Lindsay Ward on the borough council for some years. For a period he was a major in the West Lancashire Division R.A.M.C.T. As a Freemason he was P.M. of the Lindsay Lodge, and later D.C., and was an Officer of Provincial Grand Lodge, holding the rank of P.Pr.G.W. of West Lancashire. An enthusiastic Rotarian, he was a member of the Wigan Rotary Club from its inception. Mrs. Monks predeceased her husband two years ago. Dr. Monks leaves a son and two married daughters, one of whom is in Mexico, and the other, after a successful stage career under the name of Evelyn Drew, married Captain Giles of the Indian Army. Dr. Monks will be very greatly missed by many Wigan people, and deep sympathy is felt with his family in their bereavement.

J. B. HUGHES, M.A., M.B., B.CH.

Chairman of the Stockport, Macclesfield, and East Cheshire Division

Many readers will regret to learn that Dr. John Brierley Hughes of Macclesfield died suddenly on February 20th, at the age of 63. We are indebted to Dr. Lionel Picton for the following memoir.

Jack Hughes was Macclesfield born and bred. He was educated at the famous Macclesfield Grammar School, and all his life he was in touch with it. He became a governor, and he represented it on the Macclesfield Education Committee. He was to have presided at the Old Boys' dinner which fell the week after his death. His school was an abiding interest. In 1890 he went up to Caius College, Cambridge, and took his degree in the Natural Sciences Tripos three years later. He rowed for his college. Thence he entered St. Bartholomew's, where he clerked for Sir Dyce Duckworth. Two years before the end of the century he was back in Macclesfield and in his father's practice. It was to his father and to Sir Dyce Duckworth that he owed much of his clinical method. He was sound and practical, averse from adventure, but alert to recognize a real advance. He was a master of the well-established methods, of "those things which are most surely believed among us." His surgery—for he was a surgeon and doyen of the Macclesfield General Infirmary—was of the same character, based on the need of the individual patient and on well-founded experience. His father, Dr. James Brierley Hughes, was medical officer to the workhouse, and had built up a great family practice besides. To these spheres his son succeeded, and as the medical officer of the Macclesfield Guardians institution at West Park he set for himself an exemplary standard. Indeed, a sense of public duty characterized him and grew with the years. During the war he was medical officer of Auxiliary Military Hospital, in the workhouse grounds, and in 1920 was awarded the M.B.E. (civil). His services to the medical profession had the same characteristic. He was a member of the Cheshire Panel Committee from its first, embryonic stage. For many years he was its treasurer. He held, year after year, the honorary secretaryship of the Stockport, Macclesfield, and East Cheshire Division of the British Medical Association. In both capacities he received presentations in token of the first-rate work he had put into his offices. As a member of the Cheshire Insurance Committee and of the Medical Service Subcommittee his personal charm and tact were a real asset in establishing the best relations between the lay and professional elements. It was, indeed, that charm of his and his youthfulness that were his outstanding qualities. The "Dr. Jack" of 1898 was a debonair figure in town and countryside. That the soubriquet clung to him to the end, when his father and his brother Guy were long dead, bespeaks the affectionate interest in which he was held. All knew him, and to know him was to like him. His urbanity added to his charm, his unruffled equanimity stabilized it, but the charm was in his personality and his youthful and human outlook.

By the sudden and tragic death of Dr. CHARLES MERLIN EYNON, on February 23rd, from acute pneumonia following influenza, at the early age of 35, the Warrington Division of the British Medical Association has lost an able and loyal member, and a promising career as a surgeon of ability has been cut short. His early years showed great perseverance and grit. He left his native Harrogate along with his parents for Canada at the age of 13. He determined to enter the medical profession, and overcoming many difficulties he graduated M.D. at the Queen's University, Kingston, Ontario, in 1922, winning the Hoffman Fellowship in surgery and the University gold medal in surgery. A year later he took the M.C.P.S. (Ontario), and held the post of house-surgeon at the Hamilton General Hospital, Canada. In 1924 Eynon returned to England and obtained the F.R.C.S.Ed., and was appointed resident surgical officer at the Ashton-under-Lyne Infirmary. After serving there for eighteen months he returned to Canada as surgeon in connexion with the construction of the Welland Ship Canal. He remained there two years, and again returned to England, when he took up a partnership in general practice at Warrington with Dr. Bernard Murphy, in 1928. He was appointed an honorary surgeon to the Warrington Infirmary, and surgeon to the Municipal Maternity Home in Victoria Park, and to the Dutton Isolation Hospital, Cheshire. Although Eynon was chiefly interested in medical practice, especially its surgical aspects, he had wider interests. He was a member of the Warrington Archaeological Committee, which has done so much to forward the important Bronze Age discoveries at Grappenhall. He was a regular attender at medical meetings, took an active part in discussions, and was looked upon as a valuable asset to the Division. Alas! that his voice will be no longer heard. The large gathering, both lay and professional, present at the funeral at Hill Cliffe Cemetery testified to the esteem in which he was held, and was a tribute to his sincerity of character and ability as a medical practitioner. He leaves a widow, also a member of the profession, and two young children, for whom the deepest sympathy is felt in their great loss.

J. S. M.

Dr. JOHN BARR, brother of Sir James Barr and medical officer of health to the Rishton Urban Council for over fifty years, has died at Colaton Raleigh, Devon, at the age of 82. He received his medical education in Glasgow, graduating M.B., C.M. in 1877. In the same year he started practice at Rishton, and continued there until his retirement in 1933. He had been certifying surgeon under the Factory Acts since 1878, and after many years of service to the Victoria Hospital, Accrington, was appointed consulting surgeon to that institution. He became

medical officer to the Rishton Urban Council in the autumn of 1882, and when he retired from active work he was presented with an illuminated address and a cheque by the local community. In the early 'eighties Dr. Barr held a commission in the 5th East Lancashire National Reserve Battalion, and during the war had charge of the Volunteer Corps in Rishton. Subsequently, he took an active interest in the welfare of ex-service men, and was a trustee of the British Legion club. He was created a county magistrate in 1893. Dr. Barr was a member of the British Medical Association and the Blackburn District Medical Society; his membership of the former covered thirty-seven years. He had been churchwarden at Rishton Parish Church, president of the local Liberal club, and a keen Oddfellow. He took much interest in photography, and many fine examples of his work were exhibited and published: he was president for some years of the Blackburn Camera Club.

Dr. ERNEST AUGUSTUS FARR, who died on February 23rd, was a most popular and distinguished citizen of Andover. He received his medical education at Guy's Hospital, obtaining the diploma M.R.C.S. in 1885, and the L.R.C.P. in the following year. He entered fully into the medical, municipal, and social life of Andover, where he was medical officer of health for twenty-six years. He was also medical officer to the War Memorial Hospital. In 1920 and the two following years he was mayor, and acted as deputy mayor at the end of 1928. His outstanding services were fittingly recognized by the conferment upon him of the freedom of the borough in 1926. He became a member of the British Medical Association in 1895. A man of wide interests, he was able to bring about valuable improvements in the life and amenities of the town, and his loss is mourned by many who owed much to his inspiration and leadership.

Dr. ERNEST OFENHEIM, who died suddenly at Blackheath on February 23rd, was born in Vienna in 1874. As a young man he had a commission in the Austrian Cavalry, and on resigning it he spent a year in veterinary research on the Russian frontier. He then entered the University of Leipzig, where he graduated M.A. and Ph.D. in 1900 and M.D. in 1902. Soon after this he came to England and went to St. Mary's Hospital, where he took the qualifications of M.R.C.S., L.R.C.P. in 1904, later becoming naturalized. After two years in general practice at Bexley Heath he returned to St. Mary's, and became one of the band of research workers in the inoculation department under Sir Almroth Wright. Being now resident in Blackheath, he was elected in 1906 as honorary bacteriologist to St. John's Hospital, Lewisham, and later, in 1910, as one of the honorary surgeons. It was with this hospital that he was most intimately associated during the next twenty-five years of his life. In 1911 he was largely instrumental in erecting the new bacteriological and *x*-ray departments. During the war some of the wards were given over to the wounded soldiers, and, at a time when it was impossible to get house-surgeons, he was always ready at any hour, day or night, to serve the hospital. When the war was over he continued during the ensuing years to devote himself with lavish generosity to the extension and enlargement of the hospital, and to him alone is due the fact that St. John's has developed from a small institution to the present fully equipped hospital of one hundred beds. He bought land surrounding the hospital, making it over as a freehold gift, and established all the various departments in new or altered buildings. Owing to pressure of business he retired from the active staff in 1931, although he continued to act as governor and honorary treasurer. He hated publicity and applause, and in all his charitable undertakings he strove to keep his name in the background. Equally beloved by his colleagues and by his patients, his presence in the wards radiated confidence and cheerfulness. Throughout his life he devoted a large portion of his income to those who were in need, and no one went to him for advice or help in vain.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The Select Committee of the House of Lords began its hearing on March 4th of the evidence in connexion with the Registration and Regulation of Osteopaths Bill. A full report of this first day's proceedings will be found at page 488.

The House of Commons this week, on a Vote on Account for the Civil Estimates, debated unemployment, afterwards resuming the committee stage of the Government of India Bill. Votes for the Ministry of Health, Board of Education, Scientific Investigations, and the Department of Scientific and Industrial Research were included in the Vote on Account.

There were laid on the Table of the House of Commons, on March 4th, under the Medical Act, 1858, and the Dentists Act, 1921, respectively, accounts of the income and expenditure for 1934 of the General Medical Council and of the Branch Councils, and of the income and expenditure of the Dental Board of the United Kingdom.

In the House of Lords, on February 28th, the Voluntary Hospitals (Paying Patients) Bill, "to empower voluntary hospitals in pursuance of Orders of the Charity Commissioners to provide accommodation and treatment for paying patients," was presented by Lord LUKE, and read a first time.

B.M.A. Committee on Alcohol and Motor Drivers

Enlarging a previous announcement on the subject, Mr. HORE-BELISHA told Mr. Isaac Foot, on February 28th, that he had asked the British Medical Association to let him have any observations that it might be able to make on the connexion between the consumption of alcoholic liquor by motor drivers and public safety on the roads in the light of the existing knowledge and experience of the medical profession. He had its assurance that the matter would be dealt with with the least possible delay. A special committee of the British Medical Association was holding its first meeting that day. He was also in communication with the Medical Research Council.

Coroners' Inquests: Personnel of Committee

Replying to Mr. Tinker on February 28th, Sir JOHN GILMOUR said the names of the persons constituting the committee of inquiry into coroners' inquests were as follows: Lord Wright (chairman), Sir Archibald Bodkin, Sir E. Farquhar Buzzard, M.D., Mr. Digby Cotes-Preedy, K.C., Sir Arthur Hazelrigg, Mr. George A. Isaacs, Mr. W. Rutley Mowll, and Mrs. Margaret Wintringham. The terms of reference of the committee were: "To inquire into the law and practice relating to coroners, and to report what changes, if any, are desirable and practicable."

Federal Control in Public Health Administration in India

In committee on the Government of India Bill, on February 28th, the House of Commons reached Clause 12, dealing with the special responsibilities of the Governor-General. Sir FRANCIS FREMANTLE moved to add "health" to these. He said the amendment did not question the distribution of public health services, with which the House had dealt elsewhere in the Bill. The House must remember there were 5,805,000 deaths in British India in a year, or something like 8,000,000 in all India. Cholera caused 70,000 deaths a year. Plague caused 47,000 deaths a year in British India and some 9,000,000 in the epidemic at the beginning of the century. Epidemics were liable to flare up in any province or State, and to run like wildfire from one to the other. Then they got beyond control. There would be no time for the inter-provincial councils to act as laid down in Clause 133. It would be long before they were set up, and a grave menace

might occur on the morrow of the Bill coming into force. The Public Health Commissioner of the Government of India in his last report said that the general opinion held by directors of public health and their staffs was that no provincial health departments in India had even the minimum requirements necessary for the efficient performance of their functions. He asked the Government to face this problem as one of war. The Viceroy was empowered to intervene on any grave danger to tranquillity. Disturbances of tranquillity might result in 1,000 deaths, but the menace of disease in thousands, or even millions, of deaths. The medical profession must state the position as it saw it. It had no wish to invalidate the Bill, but only to strengthen it. Mr. CHURCHILL said the question far transcended party politics; it was concerned with the great warfare of mankind against disease.

Mr. BUTLER, replying for the Government, said the whole subject had been considered. Sir Francis Fremantle's words were in no way exaggerated. Public health was a provincial subject under the Bill. It had been a transferred service for several years, and he paid tribute to the way the provincial Governments of India had handled it. It was possible to criticize the administrators of public health, but health was one of the subjects to which Indian Ministers had paid most attention. When the Government considered the possible passage of disease from one unit of the federation to another it realized, as Sir Francis did, the urgency and danger. Item 29 of Concurrent List No. 3 in the Bill included the prevention of the extension from one unit to another of infections or dangerous diseases affecting men, animals, or plants. Since this item was in the second part of the Concurrent List it was susceptible of the operation of Clause 125 (2) of the Bill. That meant that if the provisions of the clause operated the central executive had power of control over the provinces. Therefore the correlation necessary was included in the Bill. There was also machinery under Item 12 in List 1 which provided for the setting up and maintaining of federal agencies or institutes for research, including scientific and medical research. Clause 133 referred to the possibility of inter-provincial councils. Sir Francis Fremantle, in conversation, had asked him about the possibility of some central board of health to deal with India as a whole. From action by the Legislature of India under Clause 133 might spring the health organizations which Sir Francis urgently desired.

Sir ARTHUR STEEL MAITLAND said that under the item in List 3, to which Sir Francis had referred, immediate action could be taken for stopping epidemics, but many members would be glad if the Bill made more specific mention of health. There was also the need to collate medical information from within India and from without. There should be continuance of the central department, and the centre should always have the initiative. The DUCHESS OF ATHOLL supported the amendment, and said there was now no standardization of public health measures in British India, except at the major ports. Mr. CHURCHILL considered that to deal with pestilence in India supreme direction was required. He recalled, from his own experience, the reluctance of the population to have their armpits examined for plague. To say the Governor-General had not responsibility to shield masses of the human race from pestilence sweeping through the land was a grisly hiatus in the scheme for the future government of India.

Sir SAMUEL HOARE remarked that public health was a provincial service now, and the essential need was to get the sympathy of the people dealing with it in the provinces. One of the best features of recent years had been the increased interest of Indians in such questions. In actual practice the Governor-General would not be able to intervene as Mr. Churchill desired, and if he did would turn the provincial public health authorities against the action he wished them to take. It was better to leave the service a provincial one, at the same time making provision for central research and for the interest of the Federal Government, in case of epidemics, quarantine at the ports, and so on. There, by all means, the Federal Government should intervene. He asked Sir Francis Fremantle not to press his amendment, and promised to look into the matter to see if the Government, while keeping health definitely a provincial subject, could go a little further in the Bill.

Sir FRANCIS FREMANTLE said Sir Samuel Hoare talked about strengthening federal powers in research, but had not dealt with the grave menace. He wished to know if Sir Samuel would look into the strengthening of the federal power with regard to the existing organization and the Public Health Commissioner, who would advise the provinces. Such power existed in every federation, and was essential to India. Sir SAMUEL HOARE replied that he would look into the point, but insisted that the most hopeful policy was to get the public health Ministers in the provinces to meet regularly and discuss measures for dealing with these menaces.

On that undertaking Sir Francis Fremantle offered to withdraw his amendment, but Mr. Churchill refused leave, and the amendment was defeated by 145 to 20.

Medical Trade Union and Local Authorities

Replying to Captain Cunningham-Reid on February 28th, Sir HILTON YOUNG said he had seen in the Press statements that the Medical Practitioners' Union was circularizing local authorities requesting them to consider the recognition of the union and the insertion of advertisements for vacant medical appointments in the official weekly publication of the union. Local authorities were well aware that the Trade Disputes and Trade Unions Act, 1927, forbade any local or public authority to make it a condition of the employment of any person that he should, or should not, be a member of a trade union. He did not think it was necessary to circularize them specially on this matter.

Medical Club Contributions of Unemployed

Mr. GEORGE GRIFFITHS, on March 5th, asked the Minister of Health if he was aware that, because unemployed persons were not now in medical benefit with approved societies, they had to pay 9d. a week to their club doctor, whereas when they were employed and in benefit they had only to pay 5d. a week for their families, and if he would consider restoring medical benefits. Mr. SHAKESPEARE replied that the Minister had taken note of the information given by Mr. Griffiths in his speech in Committee of Supply on Friday in last week, but the terms on which medical attention was to be provided by private practitioners to persons not entitled to medical benefit under the scheme of national health insurance was a matter beyond the Minister's competence. The position under the schemes of health insurance and contributory pensions of persons who had suffered from prolonged unemployment would be considered in the light of the first report of the Government Actuary on the financial operation of the Contributory Pensions Acts.

Committee Work on the Housing Bill

The Standing Committee of the House of Commons resumed consideration of the Housing Bill on March 5th. Clause 12 provides that it shall be the duty of local authorities in urban areas having a population of 50,000 or more to define areas for redevelopment, subject to the following conditions: that the area contains fifty or more working-class houses; and that one-third or more of the working-class houses in the area are overcrowded or unfit for human habitation and not capable at reasonable expense of being rendered so fit or are so arranged as to be congested. Mr. CHARLES BROWN moved an amendment, which Sir FRANCIS FREMANTLE seconded, to extend the powers of redevelopment to all local authorities. Sir HILTON YOUNG said it would be carrying it too far to impose the duties set out in the clause on rural authorities. He would, however, agree to a later amendment extending them to all urban authorities.

The amendment was withdrawn, and the later amendment referred to by the Minister was agreed to.

Sir M. MANNINGHAM-BULLER moved to amend the definition of redevelopment areas to ensure that the proportion of working-class houses which were overcrowded or unfit for human habitation should be one-third of the aggregate number.

Mr. STRAUSS moved an amendment which, he said, would give a wider definition and would describe the houses as "overcrowded, old, dilapidated, or defective as regards sanitation." Sir FRANCIS FREMANTLE said that this proposal would not achieve its purpose, because it was indefinite. What was the meaning of an "old" house? Many houses,

built two hundred years ago, were sound, and some built during the last twenty or twenty-five years were unsound. There were two definite standards—that the houses should be overcrowded, and that they should be unfit for human habitation—to which medical officers of health and sanitary inspectors had to work all over the country, although standards might vary in different places. Sir HILTON YOUNG said that, while he appreciated the reasons for which Mr. Strauss had moved the amendment, he would feel apprehensive about accepting it for the reasons stated by Sir Francis Fremantle.

Mr. Strauss's amendment was negatived and Sir M. Manningham-Buller's amendment agreed to.

The clause as amended was added to the Bill, as was Clause 13 (redevelopment plan).

The committee adjourned until Thursday, March 7th.

Irish Sweepstakes: Hospitals' Share.—Replying to Sir Murdoch McKenzie Wood, on February 21st, Sir JOHN GILMOUR stated that on the basis adopted by the Royal Commission on Lotteries and Betting in Appendix IV of their final report, it was estimated that, including sellers' commission, approximately £44,900,000 had been subscribed to the thirteen sweepstakes promoted by the Irish Hospitals Trust Limited up to and including that on the Cambridgeshire, 1934, and that of this sum £7,603,000 approximately had been allocated to hospitals. He had no information how much of this sum had, in fact, been paid over to the hospitals.

Anthrax from Imported Goat Hair.—Sir JOHN GILMOUR told Mr. Eady, on February 27th, that the number of cases of anthrax attributed to goat hair imported for the woollen trade which had come to the notice of the Home Office were: in 1932, four; in 1933, three; and in 1934, four. In five of these cases other material was being handled, and it could not be said with certainty that the worker caught the infection from the goat hair, but the investigation indicated that this was most probably the case.

Ministry's Maternal Mortality Investigations.—Replying to Sir W. Jenks, on February 28th, Sir HILTON YOUNG said the provisional rate of infant mortality for England and Wales in 1934 was 59 per 1,000 live births. His Department took action in areas where there was an abnormal infant mortality. In reply to Captain Loder, on the same date, the Minister stated that the investigators whom he sent into the areas where the rate of maternal mortality was abnormally high had started their investigations. These were concerned with problems both difficult and complicated, and would occupy some time. He could not say when reports would be available.

Pedal Cyclists in Road Accidents.—Mr. HORE-BELISHA told Mr. Banfield, on February 28th, that nearly a fifth of the persons killed and a quarter of those injured on the roads were pedal cyclists. The increase in the number of pedal cyclists killed in 1933 as compared with 1928 was 96 per cent., and the increase in the number of pedal cyclists injured was 100 per cent., whereas the corresponding figures for pedestrians were only 8 and 16 per cent. respectively. Of the total increase in the number of persons killed in the last year as compared with the first, the deaths of pedal cyclists accounted for 62 per cent. and the injuries for 54 per cent.

Ministry of Health and Voluntary Hospitals.—Sir HILTON YOUNG told Mr. Mander, on February 28th, that he had no general statutory power of supervision over, or inspection of, voluntary hospitals.

Milk during Pregnancy and Lactation.—Sir HILTON YOUNG told Mr. Denman, on February 28th, that, according to latest information, the arrangements made by the Monmouth County Council were such that milk required on medical grounds could be obtained free for all necessitous women during pregnancy and lactation and for their children under 5 years of age. Replying to Mr. Rhys Davies, on February 28th, Sir Hilton Young said, according to the latest information in his possession, the power provided under the Maternity and Child Welfare Act, 1913, was not being used by the Hampshire County Council to provide milk or food to mothers during the last three months of pregnancy and during lactation. Extra nourishment (including milk) was provided for expectant and nursing mothers by the Public Assistance Committee of the council. He had represented to the county council that it would be more appropriate to make this provision under the Maternity and Child Welfare Act. Choice between the two methods was within the discretion of the council.

Civil Service "Cuts."—A deputation from the staff side of the Civil Service National Whitley Council waited upon the Chancellor of the Exchequer on March 4th for the purpose of urging the remission of the remaining half of the emergency cuts. The Chancellor of the Exchequer stated that the matter was a Budget one, and that he was not in a position to arrive at any conclusion upon it at present. He would, however, give careful consideration to the representations put forward.

Milk-in-Schools Scheme in Scotland.—On March 5th, replying to Mr. Guy, Mr. SKELTON stated that nineteen education authorities in Scotland were not yet operating arrangements under the Milk Act for the supply of milk in schools. Of these, seven expected to institute arrangements either during the present month or immediately after the Easter vacation. Of the remainder, there were three areas—Aberdeenshire, Aberdeen City, and Kincardine—where the local Milk Marketing Board up to the present had not agreed to carry out the scheme.

Notes in Brief

Mr. Ernest Brown states that during 1934 1,068 persons were killed by accidents at mines under the Coal Mines Act, 1911, and 3,175 persons seriously injured.

Under Section 19 of the Workmen's Compensation Act, 4,334 cases were submitted to the medical referees in 1933. No separate figures can be given for the mining industry.

Approximately 175,000 unmarried women over the age of 55 are insured under the National Insurance Acts.

The Services

DEATHS IN THE SERVICES

Surgeon Commander Roderick Joseph Graham Parnell, R.N. (retired), died suddenly at Finchley on February 5th. He was educated at Bristol Medical School and at King's College Hospital, and took the M.R.C.S. and L.R.C.P.Lond. in 1908. After filling the post of house-surgeon at King's College Hospital, he entered the Navy as surgeon in November, 1909, becoming surgeon commander in May, 1921, and retiring on September 5th, 1933. During the early part of the war he served in the battleship *Irresistible*, which was sunk in the Dardanelles, and later at Malta Hospital, and then at Haslar Hospital. Subsequently he served in H.M.S. *Iron Duke*, the flagship of Admiral de Robeck, and in H.M.S. *Royal Sovereign*, and in 1930 was appointed medical assistant to the Director-General at the Admiralty. He was a member of the British Medical Association, which he joined in 1912, resigning in 1915 and rejoining in 1934.

Lieut.-Colonel John Francis Boyd, Indian Medical Service (ret.), died suddenly in a nursing home at Windsor on February 18th, aged 53. He was born on September 17th, 1881, was educated at University College, London, and took the M.R.C.S., L.R.C.P.Lond. in 1905. Entering the I.M.S. as lieutenant on September 1st, 1905, he became lieutenant-colonel on March 1st, 1925, and retired on January 31st, 1933. For the last twelve years previous to his retirement he had been in civil employ in the United Provinces.

Lieut.-Colonel Samuel James Rennie, C.I.E., R.A.M.C. (retired), died at Torquay on February 4th, aged 79. He was born at Ecclesall, Yorkshire, on April 2nd, 1855, the son of the Rev. James Rennie, M.A., of Workington, was educated at the Sheffield and Liverpool medical schools, and took the M.R.C.S. in 1878 and the L.R.C.P.Ed. in 1879. Entering the Army as surgeon on July 30th, 1881, he became lieutenant-colonel after twenty years' service, and retired on March 28th, 1903. After his retirement he was for twelve years in practice at Masuri, a hill station in the United Provinces of India. He always took a keen interest in volunteering, and while at Masuri he reorganized the Naini Tal Mounted Rifles and the Dehra Dun Mounted Rifles, to form the Northern Regiment of the United Provinces Horse, of which he was appointed lieutenant-colonel and honorary colonel on February 22nd, 1908. He commanded the mounted Volunteer contingent at the Delhi Durbar in 1911, and also the King's Volunteer escort. When the war began he rejoined for service, and served as senior medical officer at Chakrata and Delhi

from 1915 to 1919. He received the C.I.E. in 1919. He was twice married: first, in 1882, to Kate, daughter of T. Jeffs, who died in 1885; and secondly, in 1906, to Louisa Emma, daughter of William Knighton, LL.D., of Tilesworth, St. Leonards, and widow of Brigade Surgeon J. H. Condon, I.M.S.

Lieut.-Colonel William Henry Tucker, Indian Medical Service (ret.), died in London on December 7th, 1934, aged 61. He was born on June 7th, 1873, was educated at St. Thomas's, and took the M.R.C.S., L.R.C.P.Lond. in 1898. Entering the I.M.S. as lieutenant on July 27th, 1899, he became lieutenant-colonel after twenty years' service, and retired on March 25th, 1926. He received the Kaisar-i-Hind medal, of the first class, on December 12th, 1911. He served through the war of 1914–18, and was given the Legion of Honour (Officer) on May 15th, 1917.

Surgeon Captain Harold Paget Jones, R.N. (ret.), died suddenly in London on January 1st, aged 64. He was educated in Dublin, in the school of the Royal College of Surgeons, Ireland, and took the L.R.C.P. and S.I. in 1891. Entering the Navy in November, 1894, he became staff surgeon in 1902, and fleet surgeon in 1910, retiring with a step as surgeon captain on March 12th, 1922. He served through the war of 1914–18, at first as medical officer at Queensferry, and from April, 1916, to 1919, as medical officer of the battleship *Royal Oak*, with the Grand Fleet. After the war he was appointed medical officer to the dockyard at Bermuda, and remained there until his retirement.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on March 2nd the following medical degrees were conferred:

D.M.—W. D. T. Brunyate, N. A. Gillespie, H. A. Osborn, A. Guirdham.

B.M.—T. M. Williams, E. P. Edmonds.

UNIVERSITY OF CAMBRIDGE

At a congregation held on March 2nd the following medical degrees were conferred:

M.D.—G. T. Cook, J. O. W. Bland, D. R. Goodfellow, W. R. Ashby.

M.B., B.CHIR.—H. W. L. Broadbent, P. G. S. Kennedy, W. D. Bower, N. C. Oswald, J. T. Turner.

M.B.—R. W. D. Turner.

B.CHIR.—N. G. Hulbert, A. Innes, D. L. Lewis, R. B. Heisch, C. L. Heanley.

UNIVERSITY OF LONDON

A special University Lecture in Medicine will be given by Dr. John F. Wilkinson at the Middlesex Hospital Medical School, Mortimer Street, W., on Tuesday, March 26th, at 5.30 p.m. His subject will be "Recent Views on Megalocytic Anaemias," and the chair will be taken by Dr. C. E. Lakin. Admission free, without ticket.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Dr. V. B. Wigglesworth will give a lecture in the main theatre of the school on Thursday, March 14th, at 5 p.m., on "Observations on the Malaria Epidemic in Ceylon." The chair will be taken by Sir Rickard Christophers, F.R.S. Admission free, without ticket.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Final Fellowship Examination

At a meeting of the Council, held on February 14th, it was decided to increase the fee payable by candidates for admission to the Final Examination for the Fellowship from twelve guineas to fifteen guineas as from the beginning of 1936.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—J. A. Amor, E. L. Burgess, R. W. Cope, R. N. Crossley, C. C. Joannides, J. C. Paterson, H. V. Sansom.

MEDICINE.—R. W. Cope, D. W. Hoodless, H. Marcous, R. M. Outfin, H. V. Sansom, J. S. Scott.

FORENSIC MEDICINE.—R. W. Cope, C. S. J. Dandekar, H. V. Sansom.

MIDWIFERY.—R. W. Cope.

The diploma of the Society has been granted to J. J. Amor, R. W. Cope, D. W. Hoodless, C. C. Joannides, H. Marcous, and R. M. Outfin.

Medical News

A meeting of the Society of Medical Officers of Health will be held at 1, Thornhaugh Street (formerly 1, Upper Montague Street), W.C., on Friday, March 15th, at 5 p.m., when a discussion on "Nutrition and Public Health" will be opened by Professor E. P. Cathcart and Dr. Robert Hutchison.

The Malcolm Morris Memorial Lecture, under the auspices of the Chadwick Trust, will be delivered by Mr. Henry Corsi, at St. Bartholomew's Hospital, E.C., on Wednesday, March 27th. His subject will be "Syphilis through Four Centuries," and Sir Harold Morris will be in the chair. Admission free.

The 161st anniversary dinner of the Medical Society of London will be held at Claridges Restaurant to-day (Friday, March 8th), at 7.45 p.m., with the president, Lord Horder, in the chair.

The Committee of the British Memorial to Marie Curie has arranged a banquet at Claridges Hotel, Brook Street, W., on Wednesday, March 20th, at 7.45 p.m., when the Chancellor of the Exchequer, Mr. Neville Chamberlain, will preside. The immediate purpose of the memorial fund is to provide £50,000 for the endowment, extension, and maintenance of the Marie Curie Hospital at Hampstead, and to provide an additional income of £5,000 a year.

The International Society of Medical Hydrology and the British Health Resorts Association will hold a reception at 28, Portland Place, W., on Friday, March 15th, at 8.30 p.m., when films will be shown by Colonel R. H. Elliot, "The Snake Park at Sao Paulo," and by Dr. R. G. Canti, "Cultivation of Tissue Cells." Members are invited to bring new medical apparatus for inspection.

Dr. Lawrence P. Garrod will deliver a lecture on "Some Fallacies and Dangers in attempted Chemical Disinfection" before the Pharmaceutical Society of Great Britain (17, Bloomsbury Square, W.C.), on Tuesday, March 12th, at 8.30 p.m.

A three-months course in clinical practice and hospital administration will be given at the Brook Hospital, Shooter's Hill, S.E., by Dr. J. V. Armstrong, on Mondays and Wednesdays, at 9.30 a.m., and alternate Saturdays, at a time to be arranged, beginning April 1st. It is intended for those studying for the D.P.H., and complies with the requirements of the General Medical Council's revised regulations, which came into force on October 1st, 1931. A course may, however, be taken under the previous regulations for £4 4s. The fee (£3 13s. 6d.) should be paid to the medical officer of health, L.C.C. Public Health Department (Special Hospitals), County Hall, S.E.1.

The Fellowship of Medicine (1, Wimpole Street, W.) announces that the concluding pathological demonstration at the Wellcome Museum of Medical Science will be given on March 14th, at 3 p.m., by Dr. John Franklin, on skin diseases. A week-end course in chest diseases will be given at the Brompton Hospital on March 23rd and 24th, and on March 30th and 31st there will be a course in general medicine and surgery at the General Hospital, Southend-on-Sea. There will be an intensive course in clinical medicine and surgery, at the National Temperance Hospital, from March 14th to 20th (including the Saturday and Sunday). Other forthcoming courses include: infants' diseases, at the Infants Hospital, from April 1st to 13th; ophthalmology, at the Royal Eye Hospital, during the same period; proctology, at St. Mark's Hospital, April 8th to 13th. Individual clinics in various branches of medicine and surgery are provided daily by the panel of teachers. Courses, clinics, etc., arranged by the Fellowship are open only to members and associates.

A conference on industrial physics, which is being organized by the Institute of Physics, will be held in Manchester from March 28th to 30th next. The subject for discussion is "Vacuum Devices in Research and Industry." Particulars may be had from the secretary of the Institute, 1, Lowther Gardens, London, S.W.7.

The seventh French Congress on Tuberculosis will be held at Marseilles from April 15th to the 18th under the presidency of Dr. Olmer.

The second international course of restorative and plastic and aesthetic surgery will be held in Paris and Prague and Milan under the direction of Professor Burian of Prague and Dr. Claoué of Paris from March 29th to April 15th. Further information can be obtained from Dr. Claoué, 39, Rue Scheffer, Paris, 16e.

After successful trials the National Institute for the Blind has decided to provide artificial eyes for every blind baby in its Sunshine Homes, subject in each case to the approval of the Institute's medical advisers.

The King has granted Dr. Archer Wilson Dunn authority to wear the Insignia of Chevalier of the Order of the Southern Cross, conferred upon him by the President of the United States of Brazil in recognition of his successful efforts, in difficult and dangerous circumstances, to bring aid to a Brazilian officer who had been critically wounded.

The J. G. Graves Charitable Trust, which was founded by Alderman Graves of Sheffield, has made a grant of £2,500 to the governing body of the Radium Beam Therapy Research, which is conducting an inquiry, at the instance of the Medical Research Council and the Department of Scientific and Industrial Research, into the treatment of cancer with large masses of radium.

The teaching for the D.L.O. examination at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, W.C., has been entirely remodelled and revised, in order to provide the full requirements of students working for the diploma in laryngology and otology. In addition to the daily clinical work, there is now available for Part I of the D.L.O. a fortnight's course in anatomy and physiology by Dr. Archibald Durward (senior demonstrator in anatomy at University College), who has been appointed lecturer in anatomy, and a fortnight's clinical course for Part II of the examination by the members of the medical staff. The pathology and bacteriology class and the peroral endoscopy class will continue to be given as usual.

For the sake of economy the Epidemiological Report of the Health Section of the League of Nations, which has hitherto been published monthly, will in future appear only every three months.

Medical practitioners seeking advice on contraceptive methods, or requiring details about equipment of a birth control clinic, are invited to get in touch with the secretary of the Society for the Provision of Birth Control Clinics, 153A, East Street, Walworth, S.E.17.

A Reuter telegram from Colombo announces that Lieut.-Colonel J. G. Gill, officer in charge of the Punjab malaria survey, has been selected by the Ceylon Executive Committee for Health to direct the campaign against malaria throughout the island.

The issues for February 23rd of the *Revue Médicale de la Suisse Romande* and of the *Schweizerische medizinische Wochenschrift* are dedicated to Dr. Max Askanazy, professor of morbid anatomy at Geneva, on the occasion of his seventieth birthday.

Williams and Norgate, Ltd., announce for early publication *Epidemics and Crowd Diseases*, by Professor Major Greenwood, D.Sc., F.R.S., F.R.C.P., president of the Royal Statistical Society.

Lord Bessborough, Governor-General of Canada, in a national broadcast on March 1st, launched an appeal on behalf of the King's Silver Jubilee Cancer Fund, to which every household in the Dominions is invited to subscribe 1 dollar or more.

On the occasion of the celebration of the second centenary of its foundation the National Academy of Madrid elected the following, among others, as honorary foreign members: England: Sir Charles Sherrington and Sir Henry Dale; France: J. L. Faure, Marcel Labbé, and Jules Comby; Belgium: F. Henryjean; Denmark: A. Krogh; Italy: N. Pende and P. Rondoni; Russia: I. P. Pavlov; United States: W. B. Cannon and R. Matas.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed **to The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
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MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Calcium Metabolism

"GENERAL PRACTITIONER" writes: I have a patient who has had attacks of asthma since she was 18 years of age. She is now 35, and her only respite was during her periods of pregnancy. She has had eight children within almost as many years, chiefly because they were the lesser of two evils. Her last child was born three years ago, and during this period she has tried almost all the usual well-known remedies without receiving anything but a temporary relief. On the basis that the blood of a pregnant woman contained an excess of calcium, I started her last October on calcium lactate tablets, with the result that this has been her best non-pregnant winter for many years. Three weeks ago she reduced the dose of tablets, thinking they were no longer so necessary; she contracted a chill, which was followed by another attack of asthma, but of a much milder degree, and was associated with occasional cramps in the legs. This attack came on as usual about one week after menstruation. I believe the chill in some way interfered with the action of the calcium. It would be interesting to know what are the factors which govern the supply of calcium in the blood, and how it can produce the great excess necessary during the period of pregnancy. During this period is it possible that the ovaries assume the functions of an internal secretory gland and produce a secretion which in some way increases the absorption of calcium?

Congenital Neurosyphilis

"G." writes: I wonder if any reader can suggest treatment likely to help congenital neurosyphilis in a boy of 15. The patient suffers from epileptiform seizures at intervals of two to four weeks. This condition has been going on for the past eighteen months, previous to which he was apparently in perfect health. He has Argyll Robertson pupils, the right being usually smaller, absent knee-jerks, and strongly positive Wassermann reactions in both blood and cerebro-spinal fluid. Both parents have positive Wassermann blood reactions. The boy has been under treatment for a year with tryparsamide intravenously, neo-cardyl (bismuth) intramuscularly, and potassium iodide orally. He also had a course of phenobarbital. The symptoms have not improved in intensity, but the attacks are somewhat less frequent, being monthly almost to a day.

Menopausal Symptoms

Dr. GEORGE L. FOSS (Bristol) writes: In answer to "M. F. G." (March 2nd, p. 455), may I submit the following. Climacteric disturbances, such as flushing, etc., I have recently treated with success by oestrin therapy. At a time when the ovarian follicular hormone is diminishing the administration of progynon (Schering) dragees of 200 m.u. before each meal accompanied by intramuscular injections of progynon B-oleosum in doses of 10,000 m.u.,

or in obstinate cases 50,000 m.u. bi-weekly, give very satisfactory results, and so far I have not failed to relieve one case. In cases where bleeding has not ceased entirely the injections should be given only in the first half of the intermenstruum—that is, on the first, fourth, eighth, eleventh, and fifteenth days following the cessation of bleeding, imitating the follicular phase of the ovary. Cases of therapeutic menopause, such as those following radium or bilateral oöphorectomy, need massive doses—that is, 50,000 m.u.—either every four or every two days; 1 m.u. (Schering) is equivalent to five international units, and these massive doses may be gradually reduced as symptoms are ameliorated, and often left off entirely, or maintained for a time, by administration of dragees alone. This treatment is somewhat expensive, but the patient is well rewarded by the certain relief of these distressing symptoms.

Post-herpetic Pain

Dr. W. LOFTHOUSE (Jamaica) writes: In reply to Dr. H. Lewis-Philipps's (Whitland) request (December 22nd, 1934, p. 1185) for suggestions as to treatment for post-herpetic pains, I think if he will give a few doses of pituitrin (P., D. and Co.), 1 c.cm. at intervals of two days, he will find that it will give relief, and permanent relief. If used in the very early stage of the eruption one dose given daily for two days, then a dose given every other day for two more treatments, I think he will find that the eruption will dry up very much sooner, and that there will be no pains, which are so distressing.

Income Tax

Use of Private House

"I. C. H." is in partnership, and the firm has a central surgery. He lives in "a small house," rent £70, which has a garage built into it, and keeps one maid, who attends to the telephone and certain calls and professional visitors. What allowances can he claim? The authorities offer only 5s. a week in respect of the telephone.

*** Five shillings a week seems quite inadequate, but "I. C. H." is not in a position to enforce a substantial claim. The fact that if it were not for the telephone he might not keep a maid does not assist; the only reliable basis of claim is the ratio between private and professional use of all services, etc., for which inclusive payments are made. On that basis there should apparently be only a small ratio applied to the domestic service cost to ascertain how much is chargeable professionally. Some allowance should certainly be made for the garage—the fact that it is "built-in" does not matter; so is a tradesman's shop. "I. C. H." might press for 10s. a week for the maid, half the telephone cost (or the exact proportion if known), and 7s. 6d. a week in respect of the garage rent and rates.

Liability of Assistant

"M. E. K." held a post at £300 per annum from January 6th to November 10th, 1934. From November 17th he took a second post at £336, but in the latter case he has to provide a car. The car cost £52, and the insurance costs £12 per annum. He is single and supports his mother. What is his liability?

*** For 1933-4 (that is, the year to April 5th, 1934) he is apparently exempt. For 1934-5 he will be liable on 31/52 of £300 plus 20/52 of £336—say, £179 + £130 = £309. From this he can deduct 20/52 of the annual cost of running the car, including 20 per cent. depreciation and the expense of *renewing* instruments, etc. He should claim the "dependent relative allowance" in respect of his mother, which will free him from payment on £25 of his net income. The amount of tax payable should be about £8 for the year to April 5th, 1935.

LETTERS, NOTES, ETC.

High Blood Urea

Dr. EDWARD COLLIER (Felling-on-Tyne) writes: The very interesting report by Dr. D. E. Dunnill (*Journal*, January 26th, p. 154) of a case with an abnormally high blood urea reminds me of a similar case which came under my care in October, 1931. The patient, a man aged 61 years, had led a vigorously busy life as the proprietor of a fish-and-chip restaurant until about Christmas, 1930, when he began to complain of loss of appetite and general malaise. Since then he had been becoming progressively weaker, and had lost about two stone in weight. He also complained of day-and-night frequency of micturition, though there was no dysuria or haematuria, and the stream of urine passed was in no way diminished. The chief abnormality found on examination was a simple enlargement of the prostate. Also, the cardiovascular system showed arteriosclerotic changes. The blood pressure was 200 systolic, 124 diastolic. The urine was pale, specific gravity 1020, and a haze of albumin was present. The blood urea was no less than 370 mg. per cent. Despite this, operation was deemed to be his only chance. Under local anaesthesia a tube was put into the bladder. Drainage was quite satisfactory, and he appeared to be going on quite well when he died suddenly on November 9th, 1931. Professor Turner, who undertook the operation, informed me at the time that the blood urea figure was the highest he had ever known in a surgical case.

Chloroform Treatment for Tapeworm

Dr. P. W. PHILIP (Huntly) writes: A local chemist, who has worked in South Africa, is very enthusiastic over a form of treatment for tapeworm which a doctor friend used in that country. This consisted of administering chloroform in simple syrup by mouth to the patient. To a male patient, in whose appendix a live segment of *T. saginata* had been found at operation twelve days previously, a 20-minim dose of chloroform was administered at 6 a.m., 8 a.m., and 10 a.m., and 1 oz. of castor oil at 12 noon. Many segments and two to three feet of worm were evacuated, but no head was observed. Three days later, after another dose of castor oil, three 20-minim doses of chloroform were administered at two-hourly intervals, followed by 1½ oz of castor oil. Several feet of tapeworm were passed that evening, including what appeared to be the head. The specimen was sent for examination, and the laboratory reported that the head was found. My partner, Dr. Garson, sen., gave one course of this treatment to a female patient who had suffered from tapeworm for years, and had been unsuccessfully treated with ext. filicis liq. on several occasions. This occurred three years ago. No head was found among the segments passed, but to her knowledge this patient has not passed a segment of tapeworm since that time, and has remained in perfect health. In my opinion, one course of treatment would be enough in a well-cleared bowel. There were no complications in these two cases, and we shall not hesitate to use this treatment in the future. My thanks are due to Mr. George Davidson, chemist, Huntly, for suggesting this treatment, to Dr. Garson, sen., for allowing me to quote his case, and to Dr. Smith, the Laboratory, City Hospital, Aberdeen, for allowing me to use his reports.

"Radium Therapy: Value and Limitations"

Mr. F. D. OWEN-KING (managing director, General Radiological and Surgical Apparatus Co. Ltd.) writes: May I be permitted to point out an error in the account, under the above heading, of a meeting of the Medical Society of London, reported in the *Journal* of March 2nd (p. 440)? Mr. Jocelyn Swan is recorded as mentioning a new low-voltage *x*-ray therapy machine working at 600 volts. He is, of course, referring to the so-called Chaoul "contact-therapy" apparatus, which operates at 60 kV—that is, 60,000 volts.

*** We learn from Mr. Jocelyn Swan that he did mention 600 volts in error for 60 kV at the meeting in question.

Ocular Torticollis or Squint

Mr. T. KEITH LYLE (London, W.1) writes to suggest that a mistake has occurred in the memorandum by Mr. E. Temple Smith of Sydney, on "Ocular Torticollis or Squint" (March 2nd, p. 416). The third word in the fifth line, "rectus," should, he thinks, be "oblique."

Corrigendum

The report of the proceedings of the Section of Medicine at the Royal Academy of Medicine in Ireland, supplied to us officially, contained an error (February 23rd, p. 382). Professor Henry Moore was recorded as saying in reference to bundle-branch block that he favoured the old nomenclature in preference to the new. In fact, what he said was the opposite.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 50, 51, 52, 53, 54, 55, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 92.